TEXTILE WORLD

A McGraw-Hill Publication

SEPTEMBER • 1951

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Textile World's 1951 Revision

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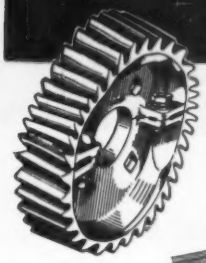

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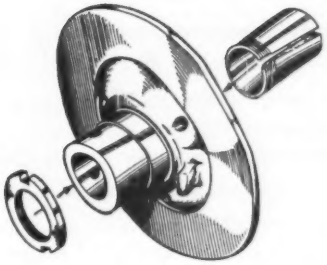

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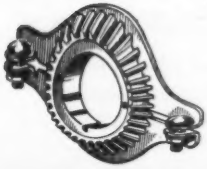

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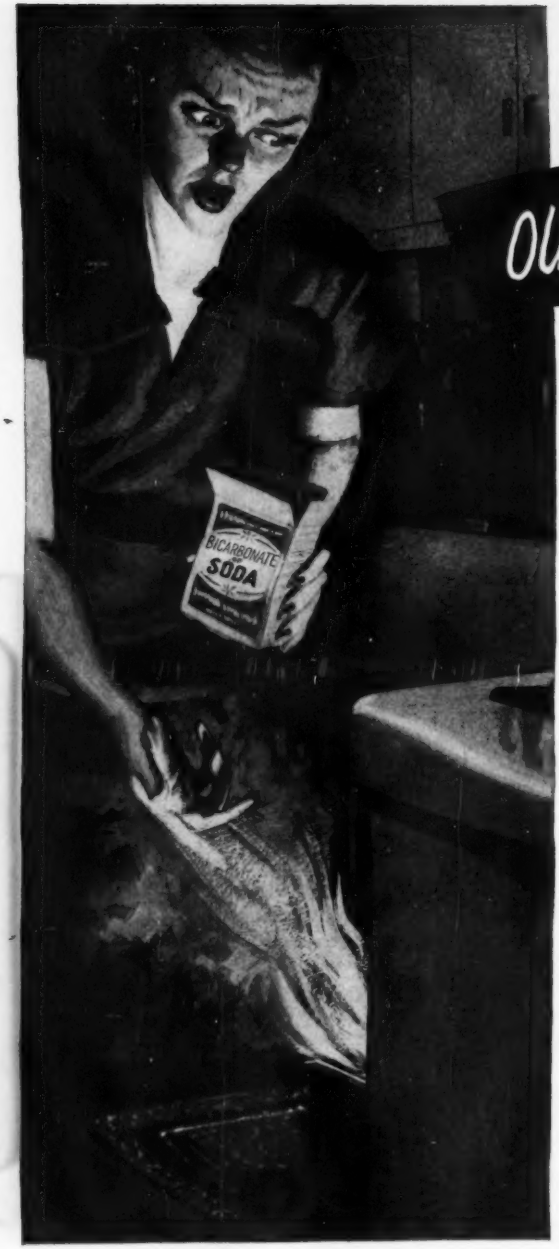

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THE *Long-Range* VIEW

It Can Happen in the South

The growth of the textile industry in the South is heart-warming to Southern communities. It now looks as though the South may dominate in primary production of synthetic fibers and possibly woolen and worsted goods, in addition to its present leading position in cotton and rayon mills.

However, to foresighted men in both the North and the South, the news has a disturbing note. The fact that much of the present and proposed activity is only migration from other sections of the country is an unhealthy situation.

Except for the progressive management of individual mills and the enlightened leadership of individual mill men, little is being done in the South to guard against the ills that beset New England and other old-industry areas. If history repeats itself, in two or three generations the South will be harried by an unreasonable labor force, inept or indifferent management, worn-out mills, and pocket-happy tax assessors.

Then migration from the South will begin.

A vigorous long-range program for avoiding these ills should be organized now. Certain phases needed in such a program are already provided to some extent by one or another organization—ACMI, for example. But what we should have is a broad, clear-cut program aimed specifically at preserving a healthy, competitive business atmosphere for succeeding generations.

A blueprint for action can be drawn from the history of the industry in England and New England. Some of the glaring "musts" would be:

1. Political action. Tax legislation by states, for example, can add considerably to the operating costs of mills. In 1948, the Tobey Senate Committee investigating Textron's closing of its Nashua, N. H., mill found these differences: State property taxes per spindle averaged 48¢ in five Carolina mills and $2.53 in New Hampshire. Power costs per kilowatt hour was 7.1¢ in the Carolinas, 12.4¢ in Nashua, and 17¢ in Manville, R. I.

If all textile workers were alert voters and all mills saw that their employees understood the issues at stake in every election, the textile industry would be in a favorable position in local and state politics.

2. Labor action. Ways must be found to preserve a labor force that has vigor and competitive spirit, that appreciates advancing technology, and that takes a realistic view toward work loads and pay.

Unions must not gain a monopoly. In an industry like steel, automobiles, or aluminum—where huge plant investment prevents migration, and where lack of non-union competition permits adequate pricing of the product—unions cannot stifle a plant. In the textile industry, unless there is complete regulation by the government, unions can put mills out of business or force them to migrate.

3. Public action. Towns, counties, and states should be cultivated and educated for a new outlook on industry. A mill is not just a business. It is an institution that contributes mightily to the life and activity of a community, state, and region. Remarkable material for dramatic presentation of the importance of a mill is at hand in New England. It is not being used in the South.

4. Management and plant action. A continuing educational program by a staff of experts should be carried on to encourage constant plant modernization and management improvement. When a mill migrates or folds up, the complete story should be told to every existing mill. When an outstanding job is done, the vital reasons should be sought out and circulated.

Such a program is challenging. If carried out properly, it could go far toward correcting some of the ills that worry the industry. Certainly the rewards would be great. There would be a very definite pay-off in lower operating costs, fewer strikes, continued reasonable taxes, better management, better labor and community relations—and an end to expensive migration.

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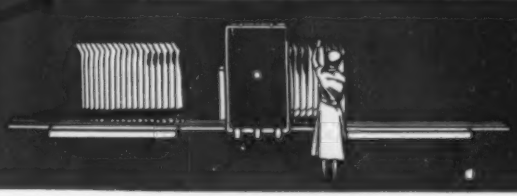

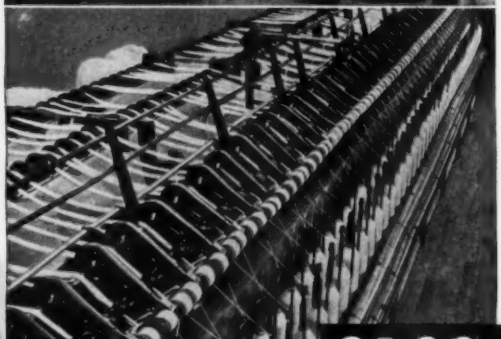

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(Upper Left) The wool top is processed through two operations of Warner-Swasey pin drafting before being creeled into the roving frames.

(Lower Left) A close-up illustration of the Saco-Lowell roving frame equipped with the FS-4 drafting system designed specifically to accommodate long staple fibers.

(Lower Right) Looking down an alley between the new Saco-Lowell spinning frames equipped with the SS-4 long fiber drafting element. Note the general cleanliness of the room which, together with the use of these completely modern frames, assures a high production of fine quality yarn.

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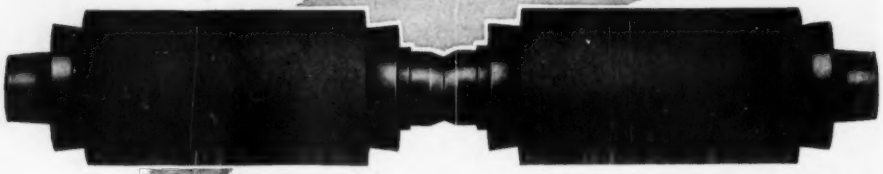

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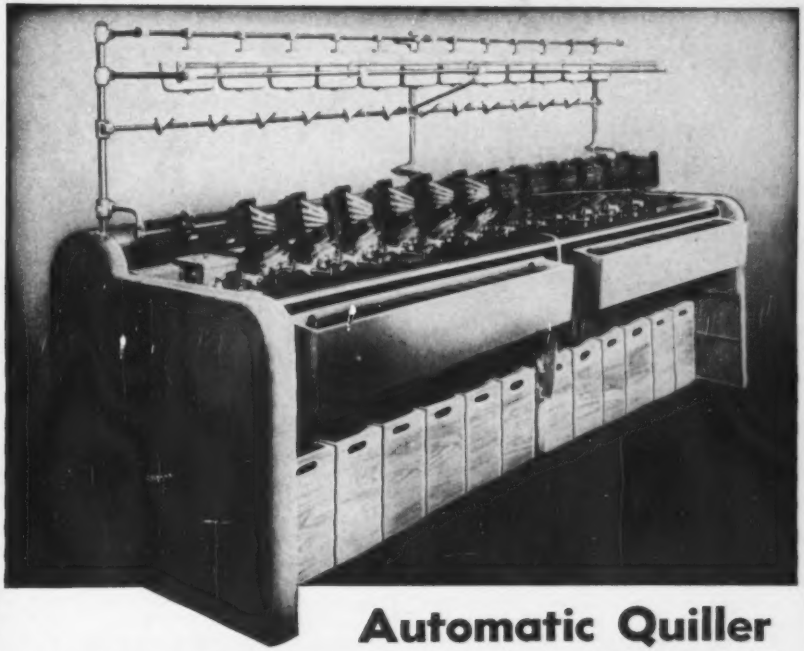

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For Particulars write to

W. SCHLAFHORST & CO · M. GLADBACH · GERMANY

Industrial Tracers Applied to the Textile Industry

The investigation of a great variety of surface phenomena on a research and production scale has been successfully completed using the Radioisotope technique. Radioisotopes have proven to be an unsurpassed research tool in the study of diffusion, friction, kinetics, and organic mechanisms. Process and product control, determination of the homogenity of mixtures containing important minor constituents, and other examples of the measurement of the flow or transport of materials are numerous. The Isotope Dilution Technique is finding a wide field of application as an analytical technique which yields quantitative data yet employs only qualitative techniques.

Here are some of the major problems in Textiles which may be probed by Radioisotopes:

Cotton fiber maturity tests.

The degree of dyestuff retention in a fabric.

The amount of dyestuff removed in laundering and cleaning.

Uniformity and wear tests of fabric coatings.

The migration and/or coverage of fabric by flameproofing compounds, lubricants and water repellents, and crease-resistant and shrink-resistant finishes.

Effectiveness of mothproofing compounds.

A competent research team is available for the consideration and execution of your work. The applied Radioactivity Division is under the direction of Dr. Charles E. Crompton, formerly with the Isotope Division of the Atomic Energy Commission, whose varied experience in this field dates back to the early days of the Manhattan Project.

We invite inquiries from all segments of industry regarding the potential application of Radioisotopes to their problems. Sponsored research projects may be carried out at modest cost and without capital investment to client.

Ask for our informative brochure "Radioisotopes—Industrial Tracers"

UNITED STATES TESTING COMPANY, INC.

Established 1880

HOBOKEN, NEW JERSEY

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Member of American Council of Commercial Laboratories

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New Departure, world's largest producer of ball bearings, takes a natural pride in having contributed 62 years of creative engineering to the industrial development wherein lies our country's strength.

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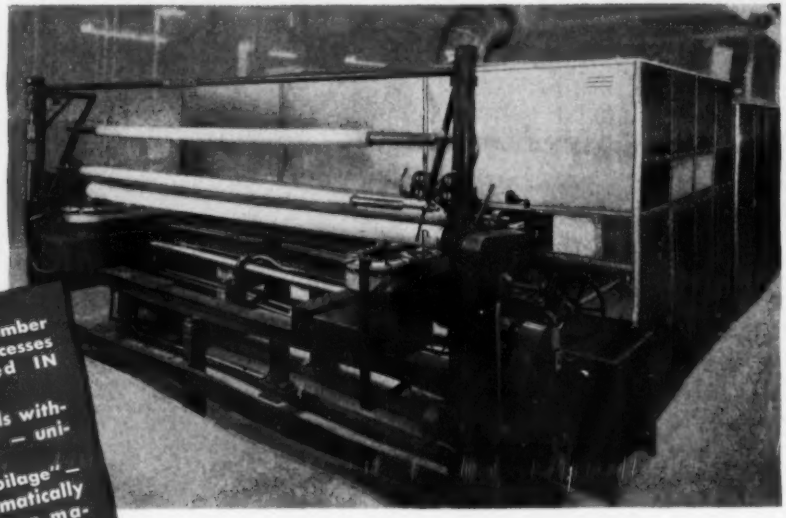
Now! ELECTRO SETTING

in the McCreary CONTINUOUS Process . . .



- Cuts costs and number of finishing processes now employed IN HALF!
- Sets dyed goods without "streaks" — uniform color!
- No "stop spoilage" — heat is automatically removed when machine stops!
- Has temperature range to 1500° F.
- Produces relaxed, wrinkle-proof, fully set cloth!
- Electronically controls uniformity of heat across tenter frame — no "edge waste"!
- NO Lamps — NO Gas — NO Hot Water — NO Forced Air!

McCreary ELECTRO SETTING provides a continuous setting of nylon by radiant heat. With it, material can be accurately set after dying and while still on the tenter frame, resulting in a fabric superior in dimensional stability and hand. It is a combination of high temperature alloy-sheath General Electric Calrod* tubular heaters and Reactrol* Control, an electronic system which holds the cloth temperature within the critical tolerances allowable for the accurate setting of nylon. While the finishing machine is not running or when fabrics other than nylon are being processed, the electro units can be automatically raised out of the way.

Completely Equipped with G-E Heaters and Controls

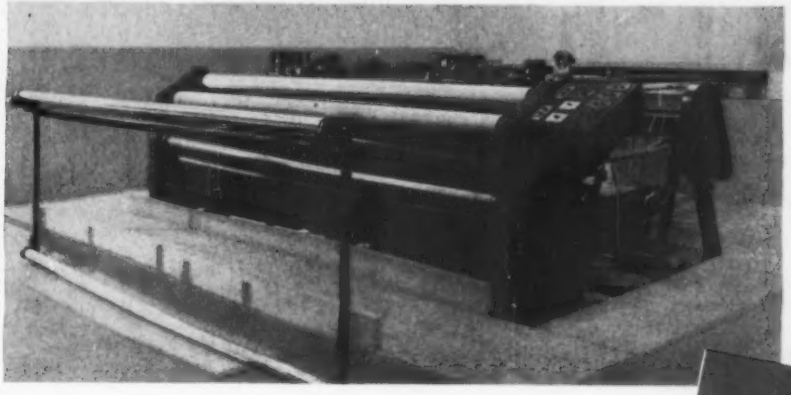
*A Registered Trade Name of General Electric Company

McCreary—The Only COMPLETE Vertical Set-up of Automatic Feed, Tenter

Since 1874 *McCreary*

Plus Automatic Pinning and Overfeed

Designed to Efficiently Finish Nylon Tricot . . .



McCreary Automatic Feed provides automatic pinning and overfeed, accurately maintaining yield of the fabric. Necessitated by the advent of the wide tricot machine, this section gives positive and accurate control of the feeding, which cannot be done by hand. The new super-sensitive guider-finger, with electronic controls and G-E Dynamic Braking, permits very close, accurate edge pinning of the finest cloth. The resulting all-mechanical process is the most economical and efficient method of handling yet developed.

- Lowest cost method of handling — cuts labor IN HALF!
- Handles widths up to 168" automatically!
- No distortion or stretching of edges!
- Positive drive overfeed — no slippage!
- Welded steel construction, ball-bearings throughout!

Completely Equipped with G-E Controls

Write for Further Information Today!

Frame, Dryer and Electro Setter . . . also Available in Separate Units

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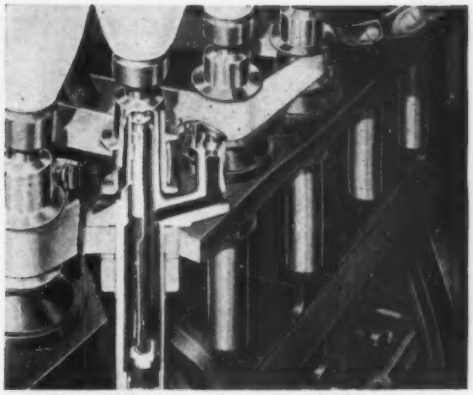
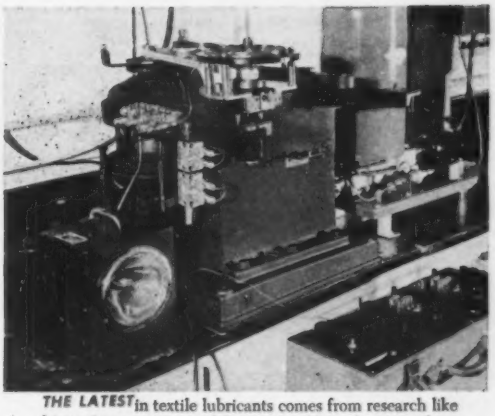


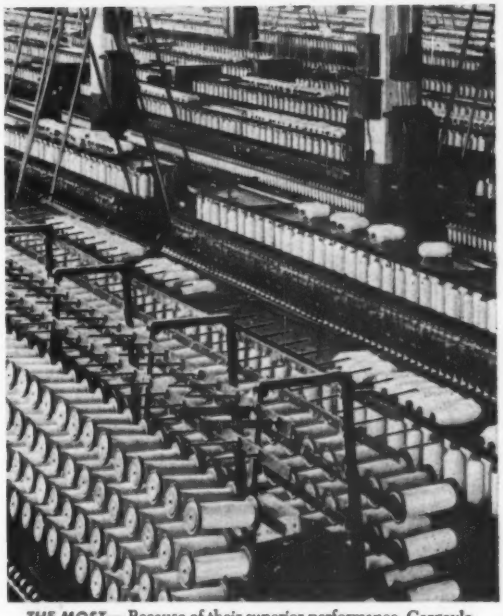
THE PIONEERS—Socony-Vacuum was the first to recognize the need for *specialized* textile lubricants. In fact, today's high-speed spindles were made possible largely through the development of low viscosity *spindle* oils by Socony-Vacuum at the turn of the century!



THE LATEST in textile lubricants comes from research like this in Socony-Vacuum laboratories. Here, for example, a twister ring tester is used to develop new oils and greases to meet conditions in the newest twister rings.

FIRST IN TEXTILES

with the Pioneers, the Latest, the Most!



THE MOST—Because of their superior performance, Gargoyle lubricants are preferred throughout the industry. Proof? . . . More spindles and more textile machinery of all kinds are lubricated by Socony-Vacuum than by any other oil company!

Why Accept Anything Less?

You can't contradict facts—and the fact is that more textile machinery of all kinds in the U.S. is lubricated by Socony-Vacuum than by any other oil company! The reason is clear . . .

Over the years, Gargoyle lubricants have proved their ability—in mills of every type and size—to minimize friction losses, cut maintenance costs, assure more continuous production of first-quality goods. They are backed by 85 years of lubrication experience—are constantly improved by research.

Why accept anything less for *your* mill?

SOCONY-VACUUM

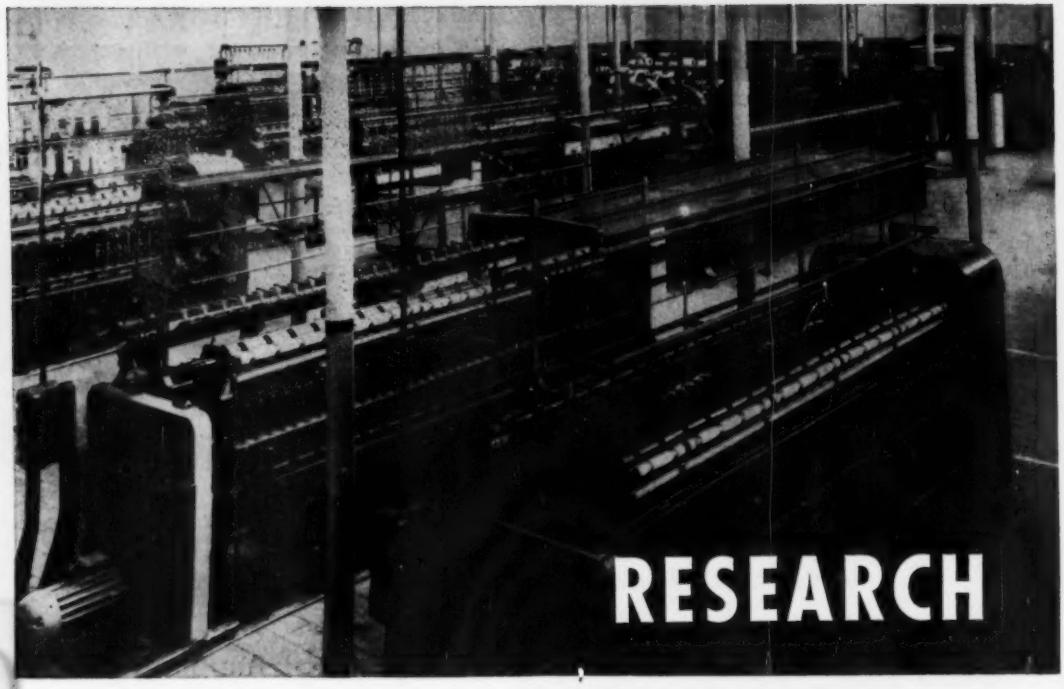
SOCONY-VACUUM

Correct Lubrication

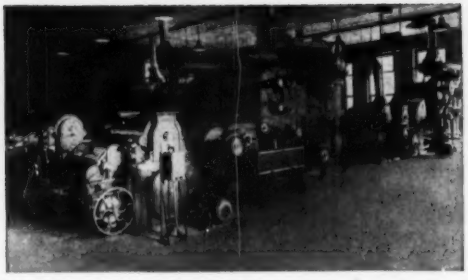
WORLD'S GREATEST LUBRICATION KNOWLEDGE AND ENGINEERING SERVICE

GARGOYLE Lubricants

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates: MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION



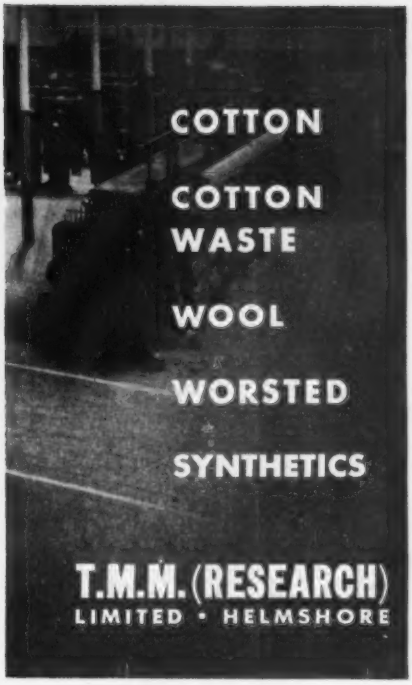
1. The machine shop is equipped to quickly fabricate components of modified or prototype machines. These shops and laboratories are for the purpose of research only.



3. The technological laboratory includes an opening and picking room, a carding, spinning and twisting room, where conditions approximate as nearly as possible those in a mill.

2. The textile testing laboratory provides full information on the quality of the product in all stages of processing, from the bale to plied yarn.

4. The physics laboratory investigates fundamental principals involved; designs and develops instruments needed for textile engineering research.



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211 CONGRESS STREET, BOSTON 6, MASS.
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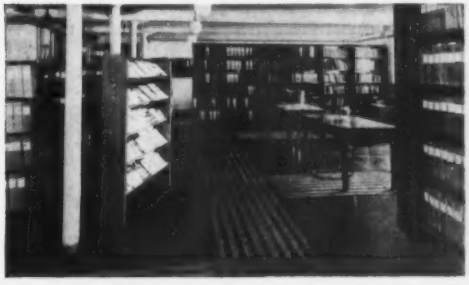
• The facilities of this world famous spinning research laboratory are held available to you

TEXTILE MACHINERY MAKERS LTD., formed in 1931, is an integration of the five Lancashire textile machinists, the oldest being founded in 1790. This group, employing sixteen thousand workpeople, delivered globally in 1950, 50,000 tons (net weight) of equipment. The group products are sold through Platt Bros. (Sales), Limited, Oldham, and research by T. M. M. (Research) Ltd., is also on a group basis.

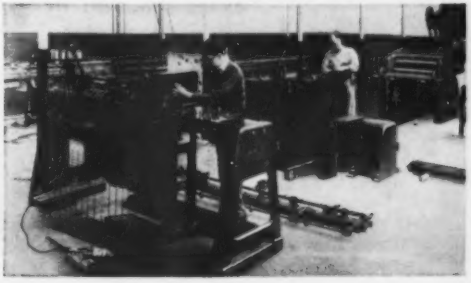
The advantages of integration are nowhere more marked than in the field of research and development, and no individual company could be expected to provide for this purpose sums in the order of $280,000 per annum, which is the budget of T. M. M. (Research) Ltd.

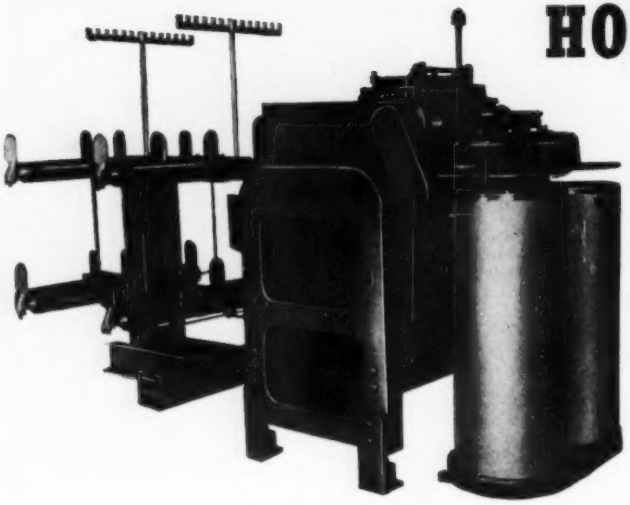
Fundamental problems of fibre manipulation in all sections of the spinning industry are the subject of continuous study with a view to achieving major advances in knowledge and in the evaluation of new machinery. T. M. M. (Research) Ltd., with a staff of one hundred and fifty, occupies 50,000 square feet of floor area and is equipped with every adjunct to its purpose. With over 50,000 world patents' specifications on file and a constant interflow of global textile problems, it is quite possible your difficulty has already been solved. If the solution is incorporated in Platt Bros. (Sales) machinery we can supply ample data; if it opens up new vistas, we will work with you in developing a machine or process that will meet your needs. We will welcome your interest in preliminary consultations at Boston or Charlotte without any obligation being incurred upon your part.

5. The information department and library classifies and files data collected from the entire world. A punch card system facilitates reference to special subject matter.



6. The prototype shop produces full scale working models embodying the results of applied research. It makes the initial run of new machines and components before the final test under actual mill conditions.





HOLDSWORTH Gill Reducer

Simplicity pays-off...

For The OPERATOR

Fewer red-lights! This machine just keeps running and running. Mechanical simplicity reduces the chance of stoppages; makes maintenance easier. For instance, the screws are pretimed at the factory and *remain* that way when the head is opened for cleaning or faller replacement. With each new installation, a Holdsworth factory man works with your operator, insuring initial optimum production.

For MANAGEMENT

Except for daily reports of top quality production, you will almost forget you have Holdsworth Gill Reducers running. Streamlined designing, well machined parts and a sturdy frame keep them off the worry list.

For The INVESTORS

Two end deliveries for the price of only *one* machine! The price is the lowest in the field, too. Production per machine, per dollar invested is greater than was previously attainable. Although the Holdsworth Gill Reducer has been on the market only a year, the greater percentage of orders on hand are re-orders from mills now operating test installations! What better reason could you have for investigating this machine yourself? Write or phone us for full data.

Español

El diseño simplificado reduce los riesgos de parada en el trabajo; hace más fácil la conservación. Los tornillos permanecen engranados cuando se levanta el cabezal. Bastidor resistente y piezas elaboradas a máquina.

Una máquina produce dos entregas. Es la máquina de menor precio en el ramo. La mayor parte de nuestros pedidos son repetidos de fábricas que trabajan actualmente instalaciones de ensayo. ¿Nos permite enviarle datos completos?

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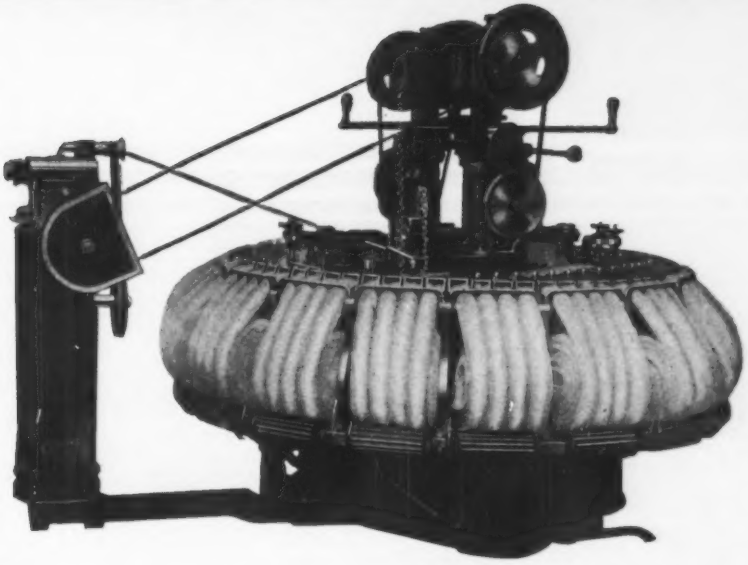
Prince-Smith & Stells' Improved NOBLE COMB



IMPROVED

Perfectly balanced dabbing motion reduces vibration and wear.

Circles with different pinning for certain qualities of wool and other fibers are interchangeable without disturbing the gearing.

New stop motion is highly sensitive to laps on the aprons. Eliminates risk of damage to drawing-off aprons and circles.

IMPROVED

P.S.B. roller stand allows adjustment of pressure while in operation and guarantees an absolutely equal pressure at each end of the roller.

New type circle cleaner raises residual fibers to the top of the pins.

The "Perfect" feed knife maintains ideal feeding conditions automatically and eliminates the human element.

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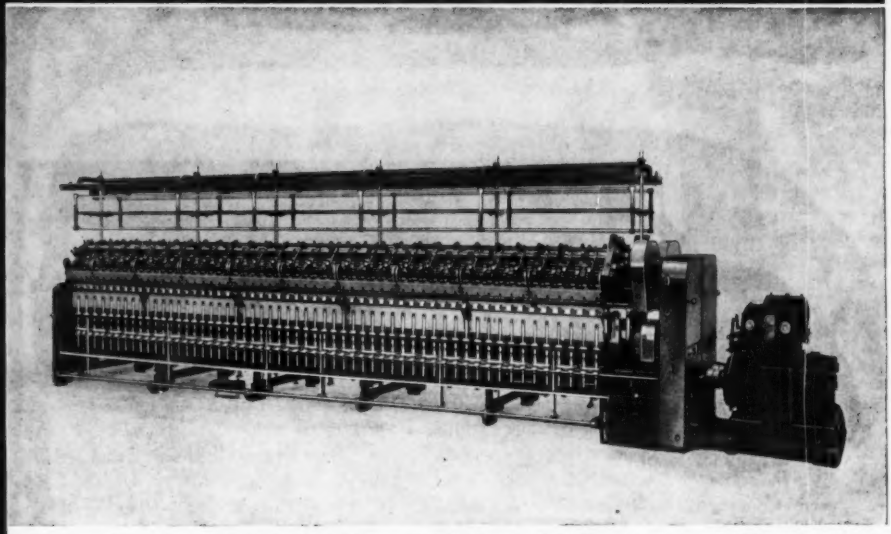

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MACHINERY FOR TEXTILE INDUSTRY
WORSTED SPINNING

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use One to two pounds of NACCONOL per 100 gallons of water, plus three to four pounds of tetrasodium pyrophosphate, sodium sulfate or sodium chloride.

get **More rapid rinsing, cleaner shades, less crocking.**

The proof of the product is its performance. NACCONOL continues to lead in performance and production for the textile industry because it provides the balanced properties necessary for better wetting and washing from the kier to the finished cloth. For best results, order NACCONOL from our nearest office.

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I prefer **JOHNSON**

warp sizers because--

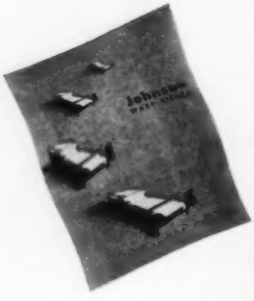
". . . we have three hundred looms in our plant. They run on a three-shift schedule.

"That is the equivalent of nine hundred looms, *all supplied by one—*

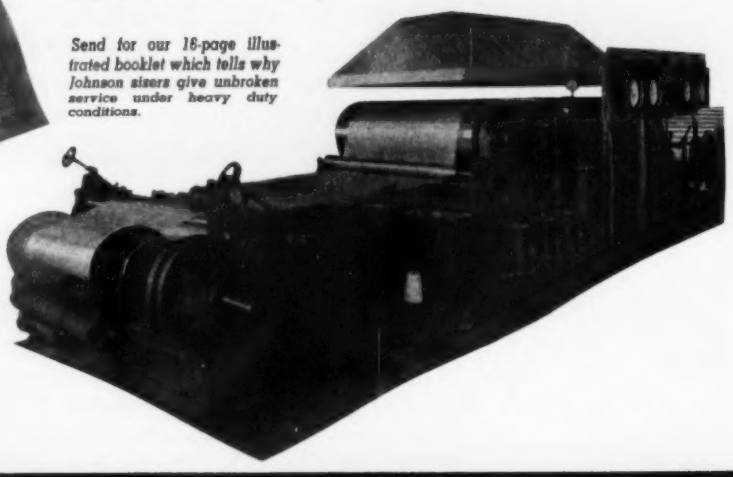
JOHNSON WARP SIZER

"In over three and a half years we have never had a headache due to stopping because of slasher trouble. We've had no serious breakdowns at all.

"In the plant where I worked before we had three (X) slashers which gave us plenty of trouble due to continuous breakdowns."



Send for our 16-page illustrated booklet which tells why Johnson sizers give unbroken service under heavy duty conditions.



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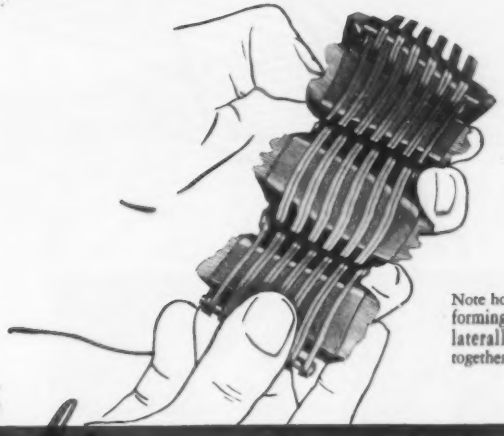


Note how slats in the self-tooth-forming chain are free to move laterally—either singly or together.

Only **the P.I.V. variable speed drive uses**

SELF-TOOTH-FORMING CHAIN

to give you positive, stepless speed changing

The operation of Link-Belt's P.I.V. Variable Speed Drive is not dependent upon friction for power transmission.

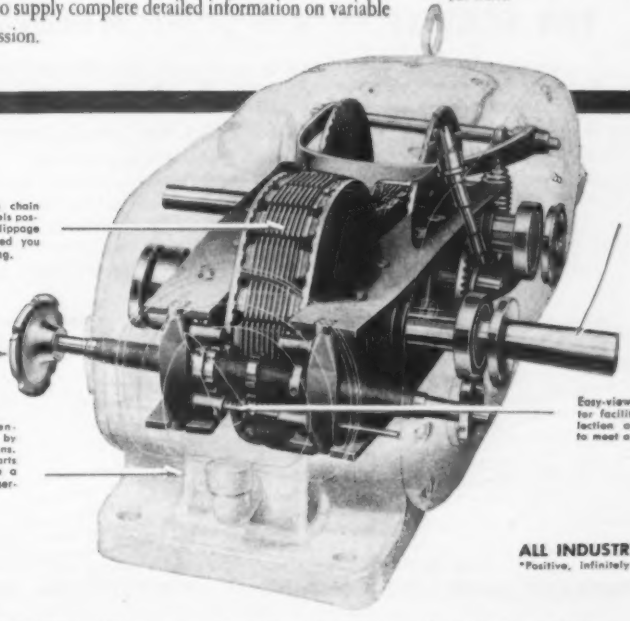
That's because only Link-Belt's P.I.V. has the self-tooth-forming chain that allows *positive*, stepless speed adjustment.

If you've been looking for exact speed changing that will deliver full rated horsepower to your machines, it will pay you to call your nearest Link-Belt branch office, as our representatives are equipped to supply complete detailed information on variable speed transmission.

LINK-BELT P.I.V. VARIABLE SPEED DRIVE

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, Factory Branch Stores and Distributors in Principal Cities.

12,272



Self-tooth-forming chain grips toothed wheels positively without slippage — gives the speed you need at any setting.

You can get minute speed changes and maintain them accurately while operating under full load.

An infinite number of positive, stepless speed adjustments may be made with manual, electric, pneumatic or hydraulic controls.

Easy-view speed indicator facilitates speed selection and adjustments to meet all requirements.

All-metal, totally enclosed — unaffected by atmospheric conditions. All vital operating parts splash-lubricated from a common housing reservoir.

ALL INDUSTRY USES P.I.V.*

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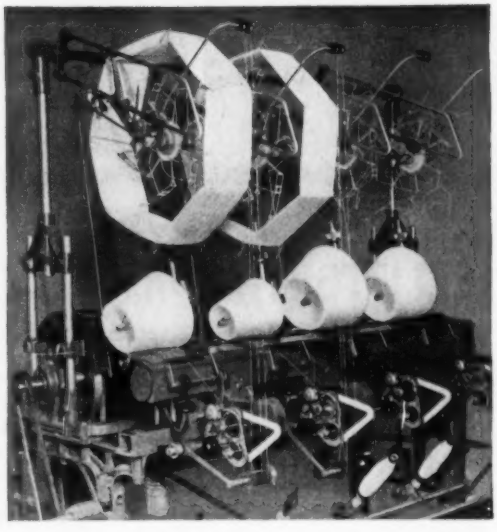

THE SCHWEITER KM CONE WINDER

Designed especially for the knitting industry, the new Schweiter KM Cone Winder consists of a variable number of individual units, each a self-contained winder, individually driven — each waxing and winding in the same operation from either bobbins or skeins. When threads become entangled in the skein, a new tension compensation device automatically stops the unit before thread breaks occur and eliminates stretched yarn. Speed changes can be effected quickly for efficient winding from all types of yarn packages, and pressure against the cone may be adjusted according to the delicacy of the yarn being wound. Here's the precision cone winder you've been looking for . . . the formula for perfect cone production at low operating cost.

SCHWEITER LTD

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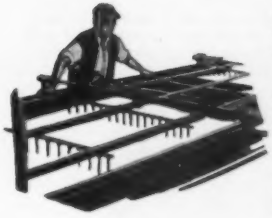
for Scouring Wool

use **IGEPALS.**

the non-ionic surfactants that make a science out of the "art" of wool-scouring



Advantages of IGEPALS in wool scouring

- Better scouring in standard equipment
- Lower concentrations necessary
- No lime scum, no harsh "hand," reduced wool grease content
- High cleansing efficiency, heavy soil ability
- Cleaned wool is soft, lofty and white
- Easily rinsed from all types of wools
- Non-substantive to wool

For effective wool-scouring why not count on "IGEPALS"

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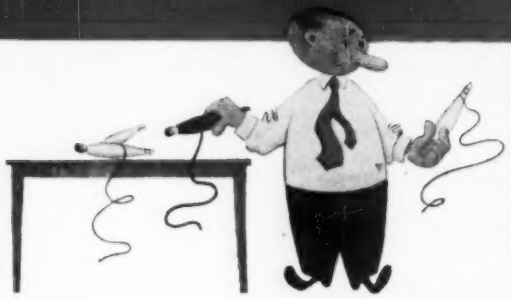
—alone—gives you the choice of 3*



REEVES—with the widest application experience of *any* manufacturer in the specialized field of speed control engineering—knows as well as you do that no *one* type of drive can be the most efficient solution to *every* speed control problem encountered by machine operators and builders.

That's why REEVES builds a *complete* line . . . *three* separate and distinct types of drives . . . all incorporating the same time-tested REEVES operating principle, but each possessing *different* features of design and construction to meet the individual requirements of the individual machinery builder and user.

All three REEVES units are available in the widest range of designs, sizes, speed ratios and automatic controls, assuring the *right* unit for every machine . . . the *right* speed for every operation and every operator, under every changing condition.

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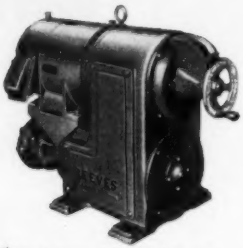
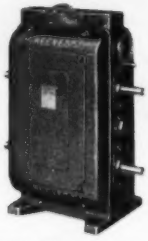
Recognized Leader in the Specialized Field of Variable Speed Control

accurate • variable **REEVES** *Speed Control*



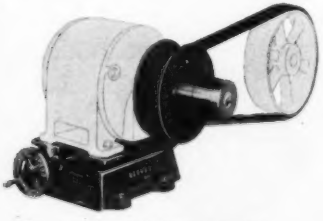
*** Vari-Speed Motodrive®**

A complete variable speed power plant. Combines any standard, constant-speed motor, REEVES speed-changing mechanism and gear reducer in one, compact unit. Sizes to 20 hp; speed ratios as great as 10 to 1.



*** Variable Speed Transmission**

Provides stepless speed adjustability over a wide range—as high as 16 to 1; sizes to 87 hp. Vertical or horizontal designs—open or enclosed.



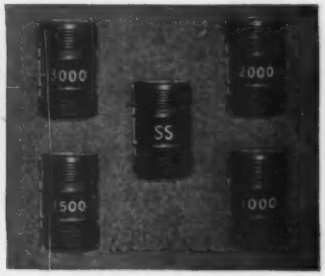
*** Vari-Speed Motor Pulley**

Converts any standard, constant-speed motor to a variable speed drive. Speed variations up to 4 to 1. Sizes to 10 hp.

Only One Wool Oil Supplier Offers You All This!

1. SCIENTIFIC ANALYSIS...
A S/V engineer uses special instruments (like this moisture meter) to analyze mill operations.

2. ENGINEERING REPORT...
After analysis, S/V engineer prepares report, with recommendation of correct wool oil.



3. PROVED PRODUCTS...
Recommended from complete line, meeting all degrees of scourability and discoloration resistance.

4. LABORATORY SERVICE...
Technicians in S/V laboratories make tests of mill samples to control performance on the job.

5. PROGRESS REPORTS...
Show efficiency of fiber lubrication, make recommendations for still further improvement.

Why accept less for your mill?

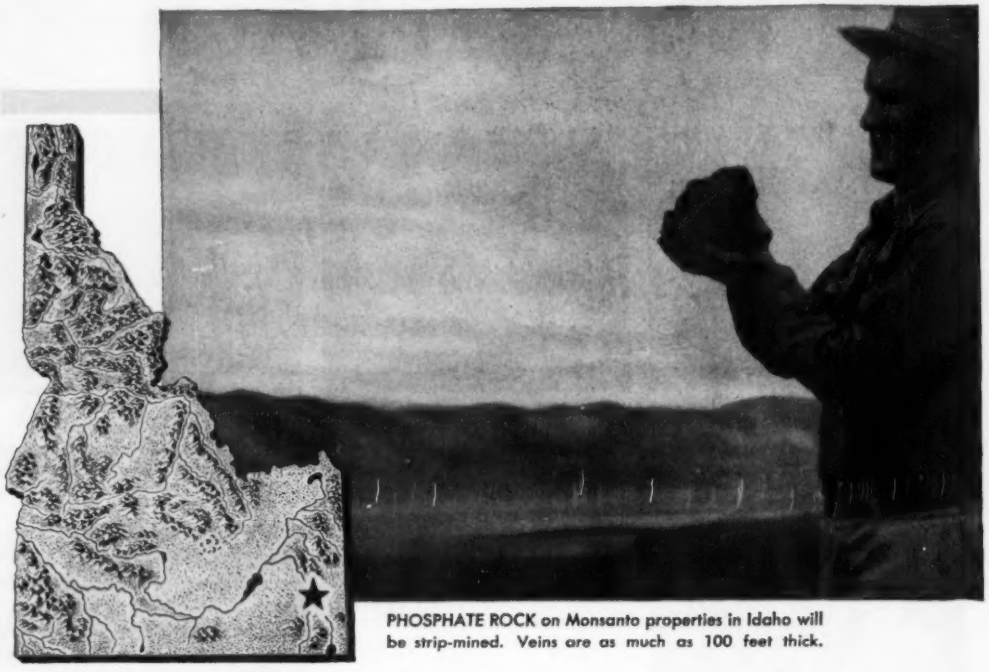
There's no mystery about which wool oil is best for your operation when you call in Socony-Vacuum. Our fiber lubrication service and complete line of *S/V Woolrex Oils* assure your use of the right product—*on a price-performance basis!* Why not get all five benefits of this exclusive wool oil service?

SOCONY-VACUUM OIL COMPANY, INC.
Chemical Products Division, 26 Broadway, New York 4, N. Y.

Process Products
SOCONY-VACUUM

Socony-Vacuum Process Products

MONSANTO Expands



PHOSPHATE ROCK on Monsanto properties in Idaho will be strip-mined. Veins are as much as 100 feet thick.

Monsanto, already the world's largest producer of elemental phosphorus, has added extensive holdings of phosphate rock near Soda Springs, Idaho. To extract elemental phosphorus of better than 99.9% purity from this rock, Monsanto is constructing a large electric furnace plant at Soda Springs, Idaho.

The output of this furnace plant, available next year, will substantially increase Monsanto's production of elemental phosphorus. It will mean more phosphoric acid and its derivatives for myriad industries using such products.

Elemental phosphorus from the Soda Springs furnace plant will travel by rail to Monsanto plants in Monsanto, Illinois; St. Louis, Missouri; Trenton, Michigan; and Anniston, Alabama; where it is converted into pure phosphoric acid and numerous phosphates serving hundreds of industries. Expansion of manufacturing facilities at these processing plants is under way.

SINCE 1937, Monsanto has been producing elemental phosphorus at its Monsanto, Tennessee, plant and today there are six large electric furnaces in the Monsanto, Tennessee, installation shown at the left. Monsanto originated the present-day method of large-volume elemental phosphorus production and was the first to ship the element in tank-car quantities.

Phosphorus Production

MORE PHOSPHORUS = MORE PHOSPHORIC ACID, MORE PHOSPHATES, MORE PHOSPHORUS DERIVATIVES

Phosphorus Pentoxide

Phosphorus burned in dry air produces phosphorus pentoxide from which these products are derived:

- Methyl Phosphoric Acid
- Ethyl Phosphoric Acid
- Propyl Phosphoric Acid
- Butyl Phosphoric Acid
- Amyl Phosphoric Acid

Phosphorus Trichloride

Phosphorus plus chlorine produces phosphorus trichloride from which the following are derived:

- Triethyl Phosphite
- Phosphorus Oxychloride
- Triethyl Phosphate
- Tributyl Phosphate
- Trioctyl Phosphate
- Tricresyl Phosphate
- Triphenyl Phosphate

PHOSPHORIC ACID

Phosphorus burned in moist atmosphere produces phosphoric acid used in various industries and from which sodium phosphates, calcium phosphates, ammonium phosphates, potassium phosphates and numerous other phosphates are derived.

SODIUM PHOSPHATES

Mono Sodium Phosphate
Uses:
Acid Cleaners
Water treatment
Textiles

Di Sodium Phosphate
Uses:
Cheese
Leather
Textiles
Detergents
Water treatment
Dye
Pigments

Tri Sodium Phosphate
Uses:
Water softening
Detergent
Metal cleaning
Water treatment
Textiles

Tetra Sodium Pyrophosphate
Uses:
Soap
Textiles
Detergents
Clay dispersant
Dyeing
Bleaching
Pitch control
Metal cleaning
Oil well drilling
Water treatment
Water softening
Glass

Sodium Acid Pyrophosphate
Uses:
Baking powder
Oil well drilling
Electroplating
Prepared flour

Sodium Polyphosphate
Uses:
Oil well drilling
Textiles
Water treatment
Detergents

Sodium Tripoly Phosphate
Uses:
Detergents
Pitch control
Metal cleaners
Water treatment
Clay dispersant

CALCIUM PHOSPHATES

Mono Calcium Phosphate
Uses:
Baking powder
Self-rising flour
Self-rising corn meal
Prepared flour
Food enrichment

Di Calcium Phosphate
Uses:
Tooth paste
Tooth powder
Food enrichment
Pharmaceutical

Tri Calcium Phosphate
Uses:
Tooth paste
Tooth powder
Anticaking agent
Food enrichment
Pharmaceutical

Tetra Calcium Pyrophosphate
Uses:
Food enrichment
Pharmaceutical

PHOSPHORIC ACID

Uses:
Soft drinks
Rustproofing
Metal cleaning
Gelatin
Jelly and preserves
Silage treatment
Fertilizer
Textiles
Sugar
Pharmaceutical
Water treatment

AMMONIUM PHOSPHATES

Mono Ammonium Phosphate
Uses:
Flameproofing
Yeast
Malt
Plant nutrient
Acid cleaners

Di Ammonium Phosphate
Uses:
Flameproofing
Yeast
Plant nutrient
Ammoniated dentifrices

POTASSIUM PHOSPHATES

Mono Potassium Phosphate
Uses:
Pharmaceutical
Plant nutrient

Di Potassium Phosphate
Uses:
Fermentation
Pharmaceutical
Nutrient solutions

Tri Potassium Phosphate
Uses:
Oil refining

Tetra Potassium Pyrophosphate
Uses:
Soap
Textiles
Water softener
Synthetic rubber manufacture

OTHER PHOSPHATES

- Iron Phosphates
- Magnesium Phosphates
- Aluminum Phosphates
- Barium Phosphates
- Beryllium Phosphates
- Copper Phosphates
- Lead Phosphates
- Lithium Phosphates
- Silver Phosphates
- Zinc Phosphates

MONSANTO
CHEMICALS AND PLASTICS
®

SERVING INDUSTRY . . . WHICH SERVES MANKIND

FOR INFORMATION on Monsanto's chemically pure phosphoric acid and phosphates, contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Phosphate Division, 1700 South Second Street, St. Louis 4, Missouri.

☆ ☆ ☆

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

You've Taught Us a Lot in *84 years...*

From our daily contacts with you and hundreds of other mill men, we have accumulated an excellent understanding of your problems.

We know that mills welcome assistance that speeds up production, makes tough jobs easier, and increases efficiency.

That's why we invite you to talk over your problems with a Howard Brothers representative. Your dealing with him will be confidential in every way . . . and of course, there is no obligation on your part.

Contact our nearest plant or branch office now.

HOWARD BROS. MFG. CO. WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga. and Gastonia, N. C.

Branches: Philadelphia, Pa. and Blanco, Texas *Direct Representation in Canada* A-3

TUFFER CARD CLOTHING **IMPROVES PRODUCTION ALL ALONG THE LINE**

AHCOVAT DYES

An outstanding khaki designed to meet exacting military requirements . . . a vat dye that fully lives up to the quality trade name AHCOVAT . . . in every performance!

AHCOVAT KHAKI 2G

This AHCOVAT has excellent fastness, making it extremely valuable for dyeing materials where high standards of fastness of colored goods to bleaching or to repeated laundry treatment are required. Among these are men's workclothes, shirtings, fancy towelings, etc. AHCOVAT KHAKI 2G is also of exceptional interest for the dyeing of fast khaki shades for military purposes.

Specific formulas for application will be submitted upon request of detailed requirements.

Shade cards on request.

ARNOLD, HOFFMAN PROVIDENCE RHODE ISLAND

Associated with
Imperial Chemical Industries Ltd.
London, England

ARNOLD, HOFFMAN & CO., INCORPORATED

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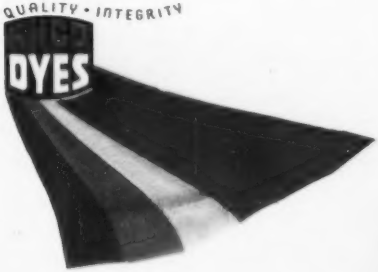
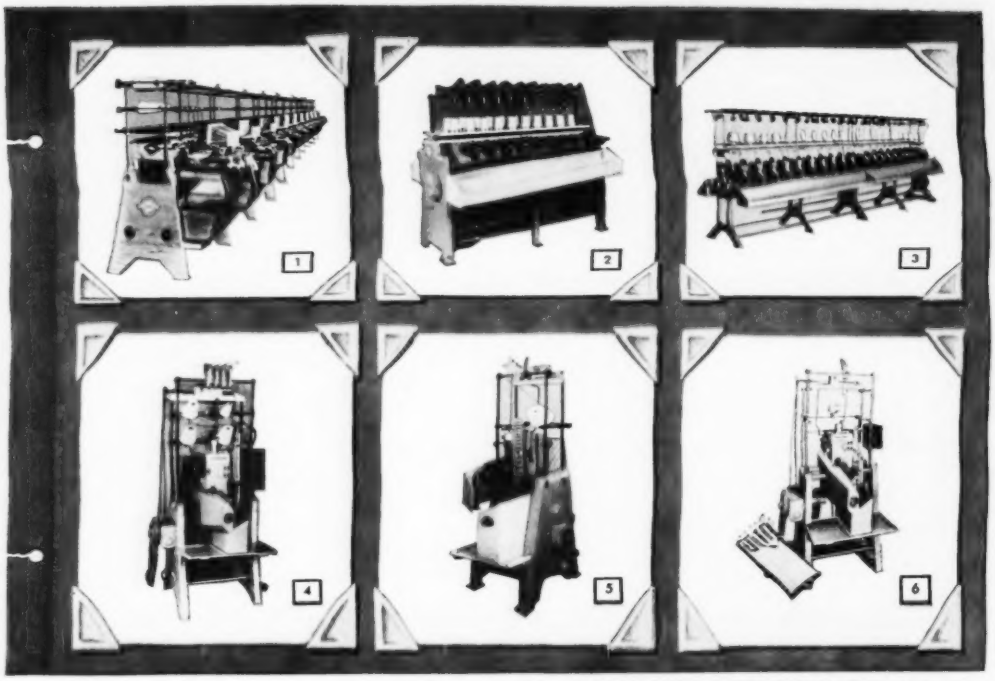
Offices: Charlotte, Cincinnati, New York, Philadelphia, Providence
Plants: Charlotte, N. C. Cincinnati, Ohio Dighton, Mass.

QUALITY • INTEGRITY



Before You Order Filling, Quill, Braider Bobbin or Thread Winders



. . . Investigate the FOSTER-MUSCHAMP Line

(Made to American Standards)

1. AUTOFILL. A flexible, automatic winder for cotton, wool, synthetics and other fibers, it will wind any type filling bobbin, tube or quill from 3" to 12" at speeds up to 6,000 r.p.m. and in either direction. Supplied in gangs of 4-40 spindles, each 4-spindle unit has an individual automatic control, bunch builder, diameter control-mechanism (eliminates builder wheel), traverse cam, layer-locking device and bobbin-length sizing mechanism. On average counts, up to 160 spindles can be tended by one operator.

2. FILLWINDER. A semi-automatic individual-spindle, high speed filling winder built in units of 20 spindles. Supplied with or without spindles and bunch builders. Equipped with new type three-speed V-belt drive which gives three ranges of speeds within 2,000-6,000 r.p.m. Slow start. New 6-point cam makes possible lower cam speeds and provides positive layer-locking to reduce sloughing while weaving. Five standard traverses from $1\frac{3}{16}$" to 2". Wind ratio adjustable to $5\frac{1}{2}$, 7, 11, or 22. Bobbin length can be varied from 6"-$9\frac{1}{2}$". Creels available to wind overend from cones, cheeses or bobbins, or by unwinding skeins.

3. SUPERFILL. A high speed, non-automatic, single spindle cop winder for producing coreless filling yarn package. Winds cotton, linen, spun rayon, blends, jute and wool in both fine and coarse counts at speeds over 500 ft. per min. Superfill packages are used in non-automatic looms and in automatic shuttle-changing looms and contain 2-3 times as much yarn as is normal on direct-spun filling bobbins. Winds on a bare spindle or a cop bottom base for regular bobbin-type shuttle. Built in units of 20, 40 and 60 spindles with each spindle a complete unit. Various types of supply equipment permit a variety of supply packages. Package diameter adjustable up to $1\frac{9}{16}$" and length up to 10".

4. AUTO-BRAID. A fully automatic machine for winding braider bobbins with traverses from $1\frac{3}{16}$" to $5\frac{1}{2}$" and diameters up to 2", and with spindle speeds up to 5,000 r.p.m. Self-contained single spindle type winder heads with adjustable gainer drive. Motor driven — 1/10 h.p. per spindle. Single or multi-end winding. Quick acting stop motion. Automatic yarn measuring device with visual graduated scale. Adjustable magazine which holds 20 average size bobbins per spindle.

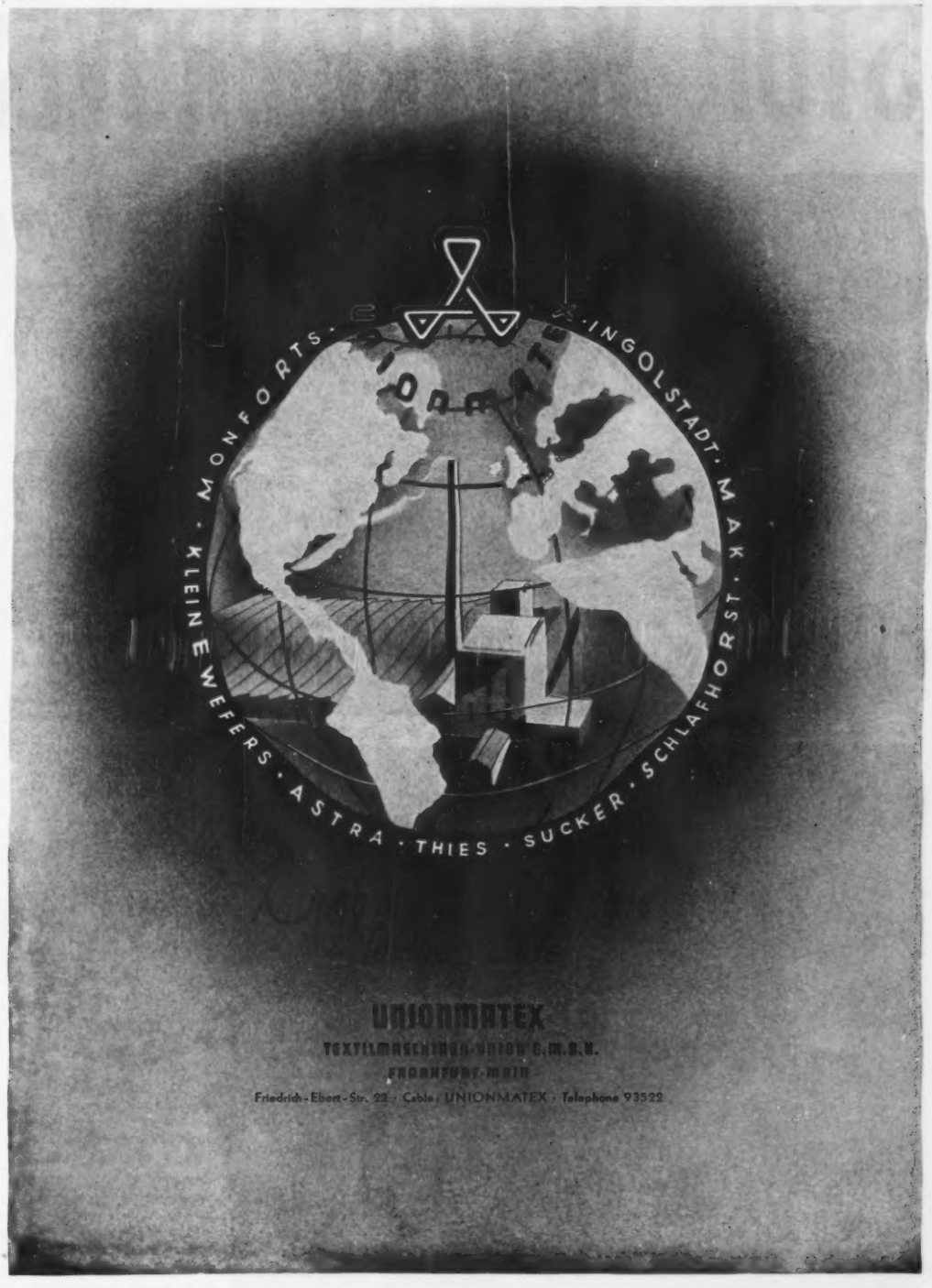
5. AUTO-QUILL. A fully automatic machine for winding 1 to 4 ends on stick quills with traverses from $1\frac{3}{16}$" to $5\frac{1}{2}$" and with straight or tapered ends at speeds up to 2,500 r.p.m. — flange quills up to 5,000 r.p.m. Adjustable magazine holds 40 average size quills. Instantaneous stop motion. Yarn measuring device and visual scales for reading traverse length and yarn length. Motor driven — 1/10 h.p. per spindle.

6. AUTO-THREAD. A fully automatic machine for winding single end sewing thread to spools with traverses from $1\frac{3}{16}$" to $5\frac{1}{2}$" and with maximum diameter of 2". Motor driven — 1/10 h.p. per spindle. Quick acting stop motion. Winding heads of self-contained, single spindle type with adjustable gainer drive. Yarn measuring device with visual graduated scale. Adjustable magazine holds 30 average size tubes. Speeds up to 2,500 r.p.m. Separate bulletins describing each of these machines on request.

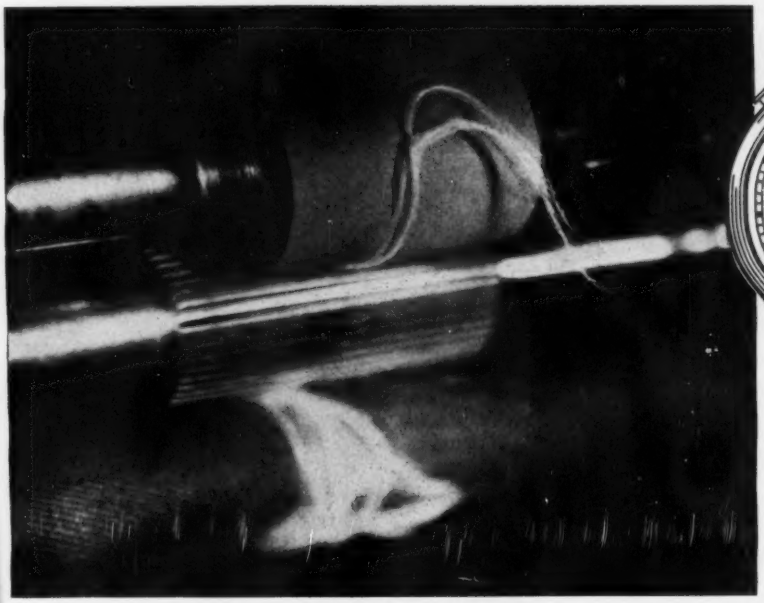
FOSTER F MUSCHAMP

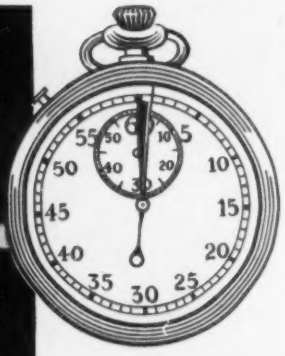
FOSTER MACHINE COMPANY
Westfield, Mass., U. S. A.

Southern Office, Johnston Bldg., Charlotte, N. C.; Canadian Representative, Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que.; European Representative, Muschamp Taylor Limited, Manchester, England.

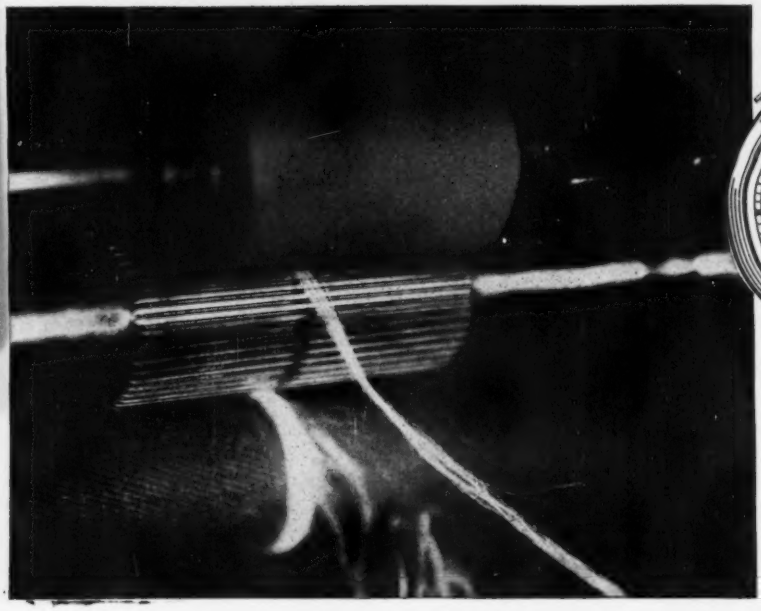

MONFORTS · KLEINEWEFERS · ASTRA · THIES · SUCKER · SCHLAFHORST · MAK · INGOLSTADT
UNIONMATEX
TEXTILMASCHINEN-UNION G.M.B.H.
FRANKFURT-MAIN
Friedrich-Ebert-Str. 22 · Cable: UNIONMATEX · Telephone 93522

STOP WATCH PROVES





When an end breaks, will the cover let the yarn run free *long enough* for it to go down on the scavenger roll? Tests in Armstrong's Laboratories, confirmed by mill experience, show that many covers will not. Many covers lap up within the first split second after an end breaks and before the yarn can get to the scavenger roll.



The longest time any cover lets the yarn run free is consistently recorded by Armstrong's Accotex® Cots. In thousands of tests, they let the yarn run free long enough for it to go down on the scavenger roll . . . in many cases it runs free indefinitely. Diagrams and pictures at right on the opposite page show why.

which roll cover is most lap resistant

THE one critical question in determining the lap resistance of any roll cover is this: Will the cover consistently let a broken end run free long enough for it to go down on the scavenger roll?

Research workers in Armstrong's Laboratories have developed a way to find this out quickly. Their accelerated test shows in minutes what it would take months to learn in the mill . . . and experience has proved that cots that perform well on this test perform equally well in the mill.

Here's how the test works. First, Armstrong's textile men put the cot to be tested on a frame section from which the scavenger roll and clearer board have been removed. Next, they toughen the test by speeding up the frame many times faster than normal. Then they break an end and measure with a stop watch how long the cot will let the end run free. The longer the end runs free, clearly the better chance it would have in the mill of going down to the scavenger roll. The longer the end runs free, therefore, the better the lap resistance of the roll covering under test.

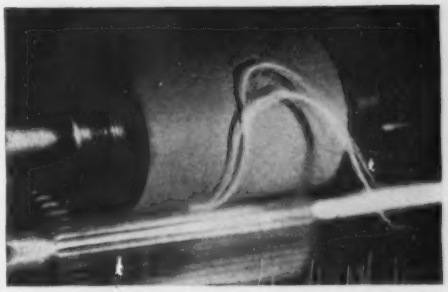
In thousands of such tests against the stop watch, Armstrong's Accotex Covers consistently prove to have more lap resistance than any other cover tested.

Why? Because Accotex Covers are made with an exclusive patented formula. Each Accotex Cover contains "electrolytes" . . . special ingredients that eliminate one of the principal causes of lapping . . . the natural attraction between fiber and cot.

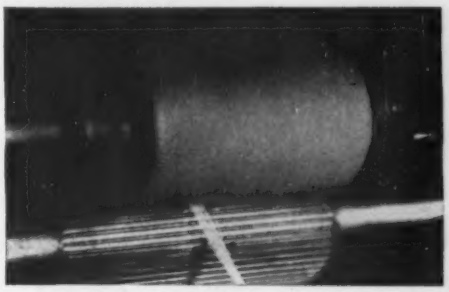
Whether you spin wool, cotton, synthetics, or blends, you can get an Accotex Cover designed for your needs, for Armstrong offers you a full line of these patented covers.

Ask your Armstrong representative to suggest the right cover for your work. Call him today or write Armstrong Cork Company, Textile Products Dept., 8309 Arch Street, Lancaster, Pa. Available for export.

Here's the scientific reason why



THIS COT LAPS: Moisture layers on fiber and cot contain electric charges that attract fiber to cot. When pressed together, the two moisture layers have the effect of adhering fibers to cot, causing them to lap up.



THIS COT RESISTS LAPPING: Certain electrolytes put in patented Accotex Covers neutralize electric charges in moisture layer on cot. This cancels out the basic attraction of fiber to cot.

ARMSTRONG'S ACCOTEX COTS

INTERCHEMICAL

Your Most Logical Source
for the Finest Textile

Colors

INTERCHEMICAL CORPORATION

Textile Colors Division

Rock Hill, S. C. Hawthorne, N. J. Pawtucket, R. I.

In Daylight or Lamplight
THE SHADE STAYS THE SAME
With Selected Interchem Acetate Dyes

Why run the risk of having fabrics returned because the shades change in artificial light! Interchemical technicians developed a series of color combinations to give you minimum shade change in different lights. They're well suited for all-acetate fabrics and help solve the complex problems in dyeing wool and acetate blends.

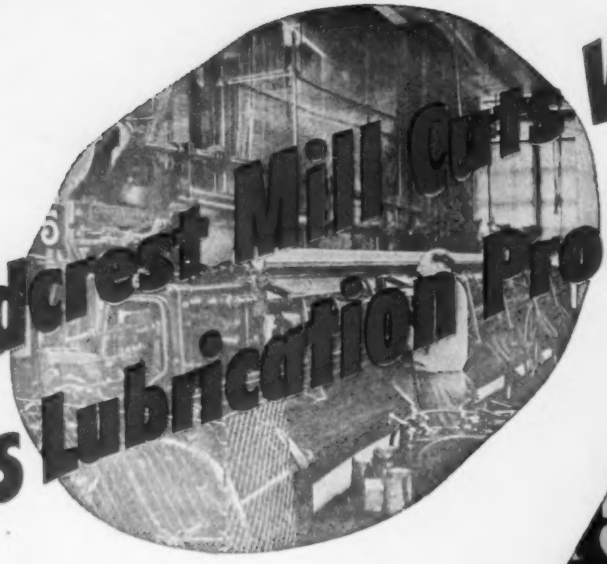
These special combinations of Interchem Acetate Dyes are another reason why Interchemical is your most logical source of supply for the finest textile colors. They provide good all-round fastness for men's wear, women's wear, carpets and draperies. Write for full details today.

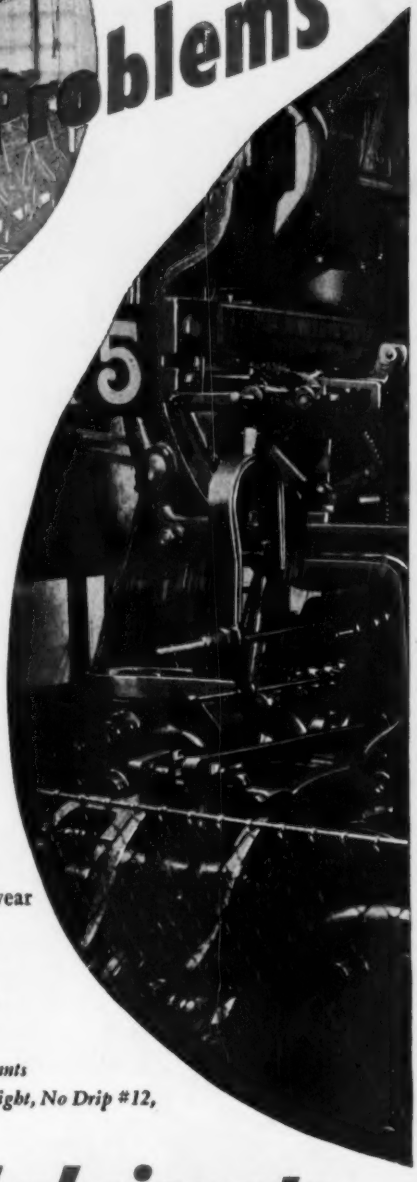
Aridye PIGMENT COLORS Reg. U.S. Pat. Off.

Interchem Dyes Reg. U.S. Pat. Off.

Arigen Dyes Reg. U.S. Pat. Off.

Fieldcrest Mill Cuts Wear, Ends Lubrication Problems





In Zion, Ill., Fieldcrest Mills, a Division of Marshall Field & Co., makes fine lace curtains and table cloths in cotton, nylon and orlon. Their lace weaving machines came from Nottingham, England, some as much as 50 years ago. With parts replacements so hard, if not impossible, to get, Fieldcrest felt it vital to get the finest possible lubrication protection.

The mill invited Sinclair engineers to study its problems. Sinclair drew up a complete lubrication program, calling for several specialized Sinclair textile lubricants.

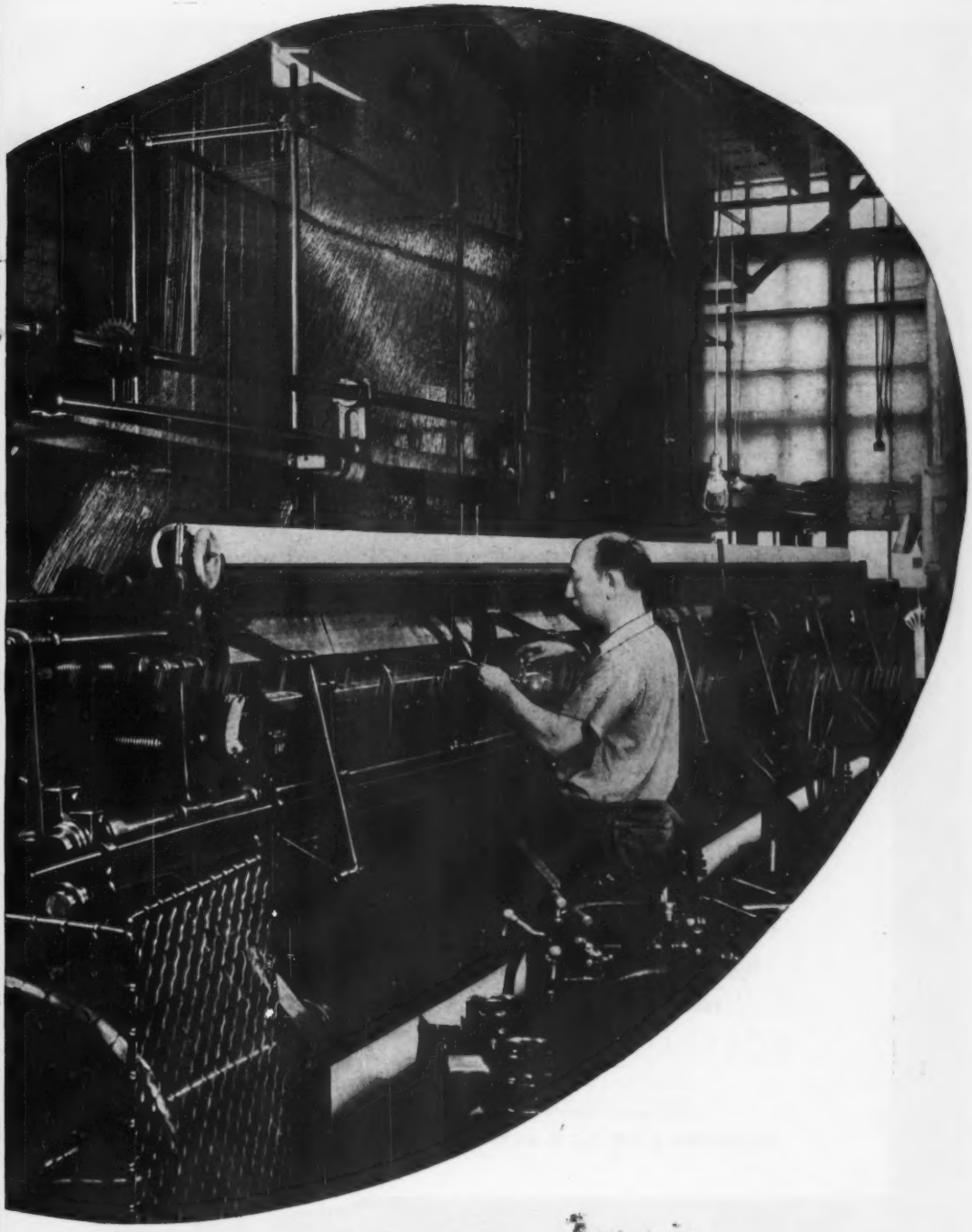
Fieldcrest followed this program to the letter. It now reports the lubrication has materially cut wear on the weaving machines and reduced breakdowns and related headaches in the bleaching and finishing rooms. Hook wear and burning in the sewing machines are no longer a problem.

Perhaps Sinclair engineers and Sinclair lubricants can help cut wear and replacements in *your* mill. Why not investigate?

A lace weaving machine in Fieldcrest Mills, where Sinclair Lubricants are saving wear. Lubricants include Lily White Oil C, Valve Oil Light, No Drip #12, Bearing Grease AF #1, Shamrock® F, Rubilene® Light.

Sinclair Textile Lubricants

FOR LUBRICATION COUNSEL, SEE YOUR NEAREST SINCLAIR REPRESENTATIVE OR WRITE TO SINCLAIR REFINING



save wear, replacements

COMPANY, 600 FIFTH AVENUE, NEW YORK 20, N. Y.

Now serving your needs as

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

You've known these familiar trademarks...

COLUMBIA CHEMICALS

SOUTHERN ALKALI

NOW look for THIS TRADEMARK to assure the same high quality in alkalies and related chemicals...

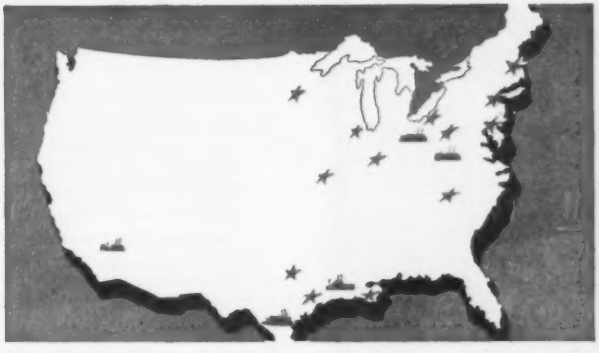
A wholly-owned subsidiary of
PITTSBURGH PLATE GLASS COMPANY

You can rely

on the same experienced organization

Whether you've been accustomed to doing business in the past with Columbia Chemical Division of Pittsburgh Plate Glass Company, or with Southern Alkali Corporation, you'll continue to find the same competent personnel—in every department—welcoming the opportunity to serve you as Columbia-Southern . . .

THROUGH STRATEGICALLY LOCATED PLANTS AND OFFICES



Production at all plants is being maintained at the highest possible levels in order to help meet the current requirements of industry.

And the same district offices will continue to provide facilities that assure the most careful attention to the needs of your business.

COLUMBIA-SOUTHERN
CHEMICAL CORPORATION

Subsidiary of Pittsburgh Plate Glass Company

EXECUTIVE OFFICES: Fifth Avenue at Bellefield, Pittsburgh 13, Pa.

PLANTS: Barberton, Ohio · Bartlett, California · Corpus Christi, Texas · Lake Charles, Louisiana
Natrium, West Virginia

DISTRICT OFFICES: Boston · Charlotte · Chicago · Cincinnati · Cleveland · Dallas · Houston
Minneapolis · New Orleans · New York · Philadelphia · Pittsburgh · St. Louis

Shown here: 3-cylinder set, with Peralta Machine. Also available in 2-cylinder and 4-cylinder sets.

Duesberg-Bosson Automatic Card Feeder

SIZE: either 78¾" or 72¾" wide, to match the dimension of the carding machine.

IMPROVED FEEDING MECHANISM: enables weight and settings to be kept within a minimum for prolonged periods.

HOPPER: large. Giant size hoppers can be had if desired.

SPIKE APRON: constructed entirely of metal, with tapered steel pins. Take-up sprockets maintain tautness.

SPIKE APRON STRIPPING COMB: heavy duty type, precision made, accurately balanced; not subject to vibration or backlash at stripping comb speeds.

SCALE PAN: sensitive weighing device automatically prevents overweighing of stock.

Duesberg-Bosson
WOOLEN CARD

Many advantages are being obtained by every woolen mill using this *modern carding machine.*

1. Substantially greater production.
2. Noticeably improved quality.
3. Greater blending of fiber and colors, due to increased doublings.
4. More uniformity of roving.
5. Increased lengths of fiber can be used.
6. Card flyings and waste held to a minimum.
7. Less re-workable waste.
8. Vibration practically eliminated.
9. Less down-time. Fewer repairs.
10. Lower power requirements.
11. More efficient lubrication.
12. Less capital investment.

CATALOGUE AVAILABLE ON REQUEST

For those who may be interested in seeing tangible evidence *on their own stock* of the superiority of the Duesberg-Bosson Card, we shall be glad to demonstrate the operation of this card. We will process sample lots at our mill, **Duesberg-Bosson Woolen Spinning Company** at Jefferson, Massachusetts (near Worcester). At this mill we are in a position to pick, card, spin, and wind on cones.

Duesberg-Bosson of America, Inc.

Manufacturers of Woolen Machinery, Developed from a Background of Over 115 Years

FITCHBURG ★ MASSACHUSETTS

All these Valves . . from One!

Valve combinations for 90% of industrial piping assembled with 4 bodies and a handful of parts.

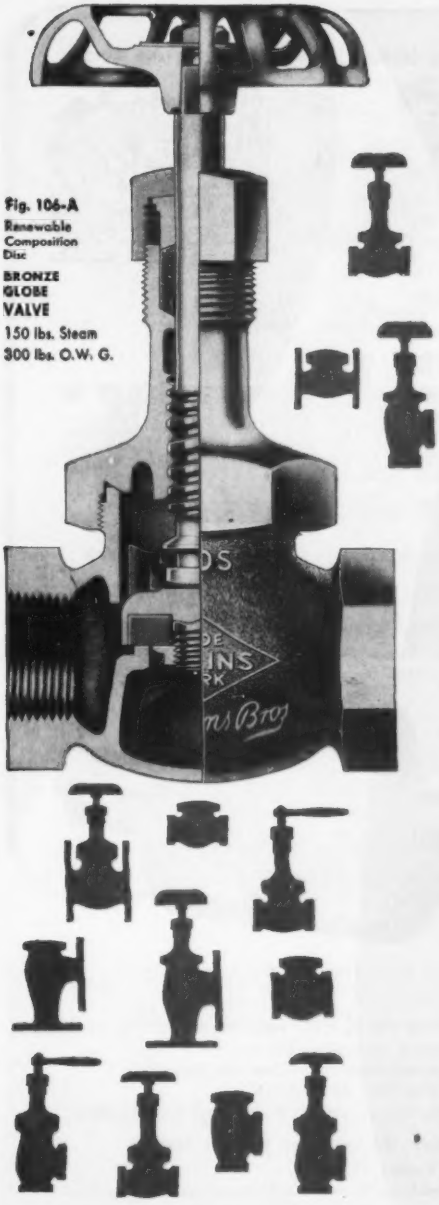
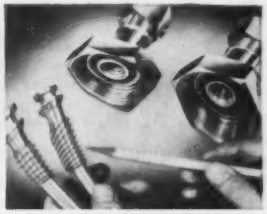


Fig. 106-A
Renewable Composition Disc
BRONZE GLOBE VALVE
150 lbs. Steam
300 lbs. O.W.G.

JENKINS FIG. 106-A "FAMILY"

Start with the standard Fig. 106-A. Trimming is interchangeable in Globe or Angle body, screwed or flanged.

For Close Control — In throttling service, the nut which holds the disc in the disc holder is removed and replaced with Throttling Nut, Fig. 344.



For Quick Opening and Closing — Merely substitute the bonnet and spindle from Fig. 941, in which threads are pitched more sharply.

For Lift Check Service — Globe or Angle Bodies can be fitted with interchangeable Cap, Disc Holder, and Guide Disc Nut from Fig. 117A. Addition of *spring from Fig. 655A provides spring loaded service.*

For Stop & Check Service — Use the 106A trim, but substitute this spindle from Fig. 630A and replace the regular disc nut with the check valve guide disc nut.

Look over these pictures and see how easy it is to make up just the valve type you need, simply by interchanging parts. Think of the saving this means in maintenance expense . . . in reduced inventory of spare valves in your stockroom.

That's a big reason why the Fig. 106-A series takes top honors in any poll for valve preference. And Jenkins time-proved design, makes them the longest-lasting, lowest-upkeep valves that money can buy.

For example, see the heavy construction of the one-piece, screw-over bonnet. You can remove and replace it over and over again without distortion. See the extra size packing box,—and the perfectly machined threads on the heavy manganese bronze spindle, with more threads in contact with the bonnet, open or closed.

Remember, Jenkins Bros. is the originator of the renewable composition disc valve,—the *only* manufacturer of both valves *and* discs. For drop-tight, trouble-free performance, get acquainted with the Fig. 106-A "family". Despite their extra value, *you pay no more* for Jenkins Valves. Jenkins Bros., 100 Park Ave., New York 17, N. Y. Jenkins Bros., Ltd., Montreal. Sold through leading Industrial Distributors.

JENKINS VALVES

COTTON ROVING AND SPINNING

WOOL AND WORSTED SPINNING

SYNTHETICS AND BLENDS

In every branch of the Textile Industry

THERE'S A NEED FOR

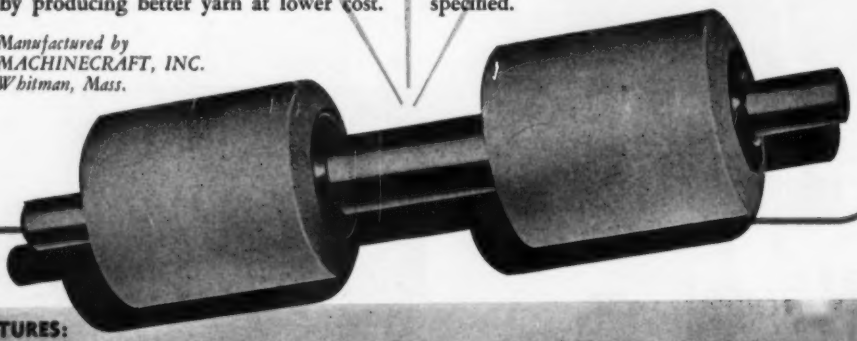
WHITIN-CLIMAX*

BALL BEARING TOP ROLLS

Enthusiastic testimonials from leading mills in all branches of the textile industry prove that Whitin-Climax ball bearing top rolls pay quick dividends by producing better yarn at lower cost.

Whitin has adopted these rolls as standard for cotton roving and spinning, wool and worsted spinning and American System equipment, when anti-friction rolls are specified.

* *Manufactured by*
MACHINECRAFT, INC.
Whitman, Mass.



FEATURES:

1. Reduction in oiling costs
2. Elimination of ends down when starting machine
3. No oil drip or stains on cots
4. No oil stained fibers
5. Perfect rotating synchronization of top and bottom rolls
6. Improved yarn quality
7. Improvement of fiber control in drafting zone
8. Reduction in roll picking
9. Eliminates lapping of lint on journals
10. Less machine down time
11. Elimination of wear on cap bars and saddles
12. Precision manufacture permits easy interchange of parts
13. Available with standard coverings, as specified

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANSBURG, S. C. • DEXTER, ME.

Cutaway shows simple, rugged construction of Link-Belt Fluid Drive.

LINK-BELT Electrofluid Drive

with constant CUSHION ACTION

LINK-BELT

FLUID DRIVES

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, Factory Branch Stores and Distributors in principal cities.

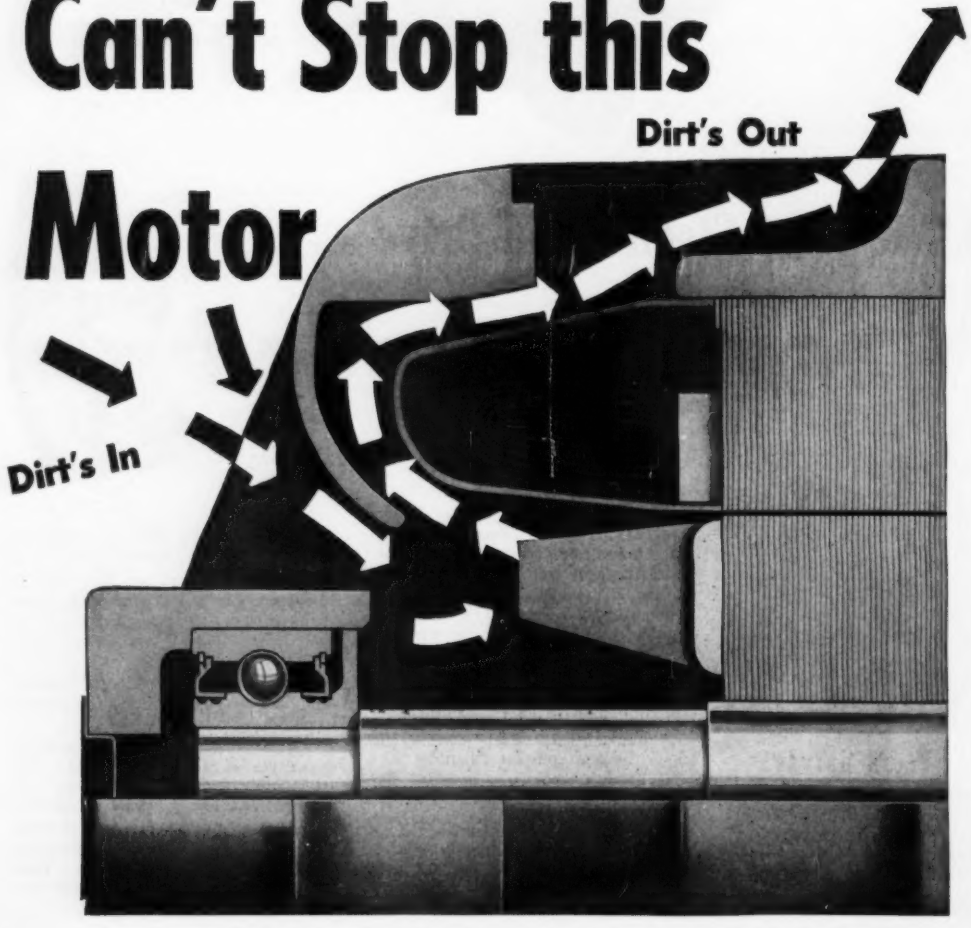
As EFFICIENT — as modern as the automatic transmission in today's automobile. Link-Belt Electrofluid Drive constantly provides a smooth flow of cushioned, shock-free power transmission. Ideal for loads of high inertia, repetitive shock or high starting torque type.

Here's how constant "CUSHION ACTION" reduces wear — cuts maintenance — and often lowers initial investment.

- Both motor and driven machine last longer because constant CUSHION ACTION protects them from overload and shock — torque, even under stall conditions, is limited by fluid drive capacity.
- On high-inertia loads requiring high starting torque, CUSHION ACTION permits motor to attain speed producing maximum torque before fluid drive output shaft revolves — often eliminating need for special or oversize motors.
- Because motor reaches 70% of full-load speed before engaging load, CUSHION ACTION starting current is less than half of normal, and power factor stays high.
- Maintenance of trouble-free Electrofluid Drives is limited to an occasional inspection of oil level.

What's more, you get all the exclusive advantages of constant CUSHION ACTION while maintaining the high efficiency of your existing drive. Book 2385 has complete information on five types of Link-Belt Fluid Drives — Electrofluid Drive, Electrofluid Gearmotor, Fluid Drive, Fluid Gear Drive and Fluid Coupling Drive.

Here's Why *Dirt and Lint* Can't Stop this Motor



For more information, write direct or use Reader Service post card.

Quick-Clean TEXTILE MOTOR

WIDE OPEN DESIGN AND POWERFUL FANS SWEEP LINT AND DIRT RIGHT OUT OF *Quick-Clean* MOTOR!

YOU HAVE NO MOTOR PROBLEM from lint-laden atmospheres when you use *Quick-Clean* textile motors. *Quick-Clean* motors have wide open passages for cooling air and powerful fans to sweep lint and dirt right out of the motor. Inside surfaces are smooth and hard so lint cannot lodge anywhere. Air passages are shaped for smooth air flow.

Quick-Clean motors also save you money with sealed bearings which eliminate usual expensive bearing maintenance procedures. Grease or oil cannot leak from the bearings to soil materials or gather lint and dirt. Lint and dirt cannot enter the bearing. Ask your nearest Allis-Chalmers Sales Office about the *Quick-Clean* textile motor Or write for the bulletin shown below which describes it completely.

MATCH QUICK-CLEAN MOTORS WITH A-C STARTERS!

This control was developed for dependable, safe starting of *Quick-Clean* motors. Other Allis-Chalmers motor control will give you dependable operation of all electrical equipment in your plant. Competent application engineers are always available through your nearby Allis-Chalmers Sales Office. A-3471

Allis-Chalmers
Milwaukee 1, Wis.

Quick-Clean, Texrope and Vari-Pitch are Allis-Chalmers trademarks.

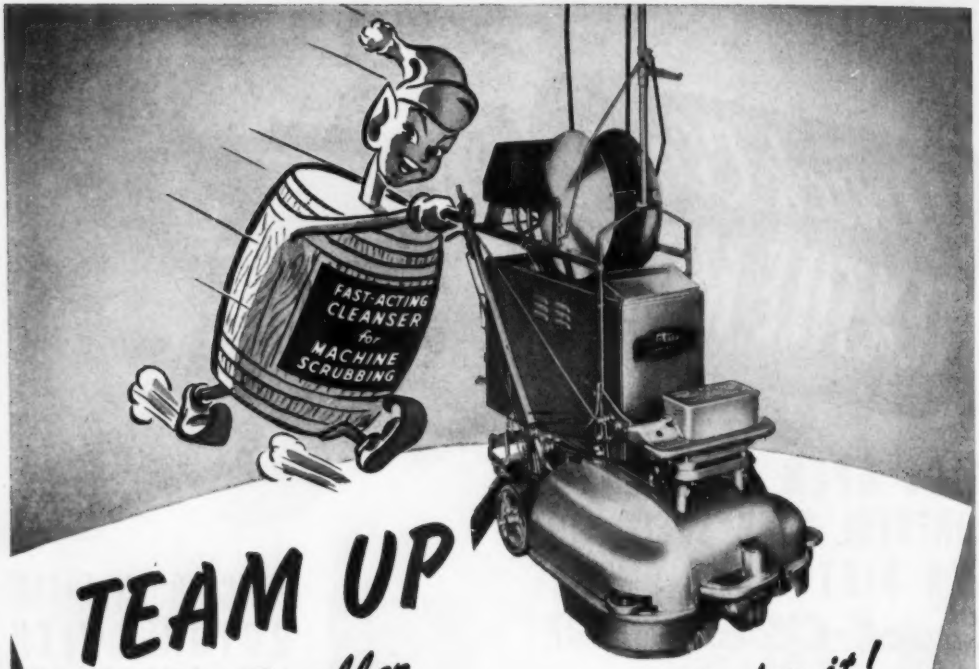
Send for Free Engineering Literature

Quick-Clean Textile Motors	51B6055	Dielectric Heater	15B6431
Allis-Chalmers Loom Motors	51B7111	Power Generating Equipment, Transformers, Circuit Breakers, Power Distribution Equipment	25B6150
Texrope Drives	20B6051		
Vari-Pitch Automatic Sheave	20B7223		

COMPLETE SERVICE — from power line to machine

ALLIS-CHALMERS

Originator of the Multiple V-Belt Drive for the Textile Industry



TEAM UP

Your Scrubber with a Cleanser that's made for it!

Get floors really clean . . . faster!

Cleansers designed for hand-scrubbing cannot be expected to give the fast cleaning action required for machine-scrubbing. In an attempt to get floors thoroughly clean, the operator of a scrubbing machine using a slow-acting cleanser may resort to prolonged brush action, but that needlessly piles up mileage on the machine, increases labor costs, and prematurely wears out the brushes. To utilize the full cleaning capacity of your scrubbing machine — to get floors *film-free clean* in minimum time — choose a cleanser that's specially made for machine-scrubbing. *All Finnell Cleansers are.* And there's a type for every need, including *Setol*, the mineral oil solvent for cleaning oily wood floors, and *Finola, the Original Scouring Powder*, for heavy duty scrubbing of smooth, hard-surface floors.

For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1909 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

The *Finnell Machine* shown above is a COMBINATION SCRUBBER-VAC

for large-area, heavy duty scrubbing. Applies the cleanser, scrubs, rinses, and picks up — all in *one* operation. Cleans up to 8,750 sq. ft. per hour! Vacuum performs *quietly*. (Powder dispenser optional.) The machine is *self-propelled*. Can be leased or purchased.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

masterpieces of knitting with **TORRINGTON needles**

Quality knitting reflects the quality of the needles you use. And whatever type of knitting you do, there's a Torrington Needle to help you produce quality merchandise.

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Torrington, Conn., U. S. A. Established 1866
Branches: New York • Philadelphia • Chicago • Boston
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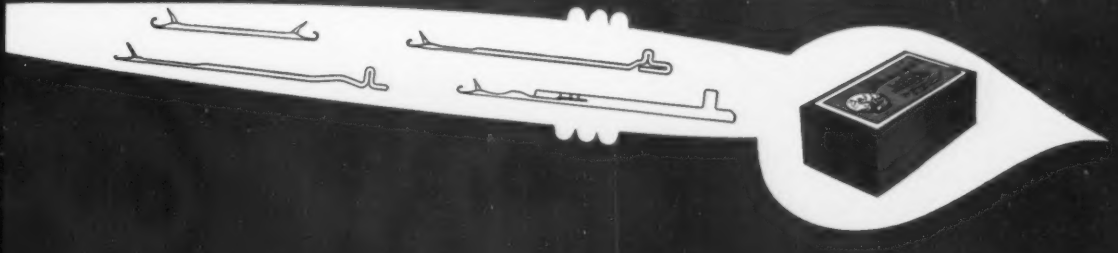
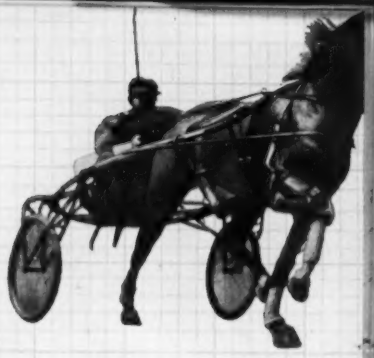


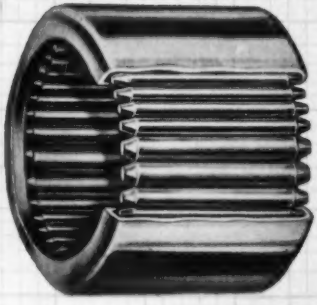


thoroughbreds...

for high speed operation

Torrington Needle Bearings are ideally suited for a wide range of operating speeds—5,000...10,000...15,000 rpm and higher. These smooth-running bearings—equally efficient for rotating or oscillating applications—have low coefficients of starting and running friction. Thus, power requirements are reduced.

Other Needle Bearing advantages—high radial load capacity, light weight and compact size—aid in simplifying design as well as increasing efficiency. Why not get full details in terms of your own product? Write today.



THE TORRINGTON COMPANY

Torrington, Conn. • South Bend 21, Ind.

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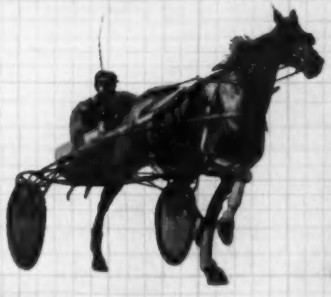

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NEEDLE • SPHERICAL ROLLER • TAPERED ROLLER • STRAIGHT ROLLER • BALL • NEEDLE ROLLERS

COTTON RING SPINNING FRAME

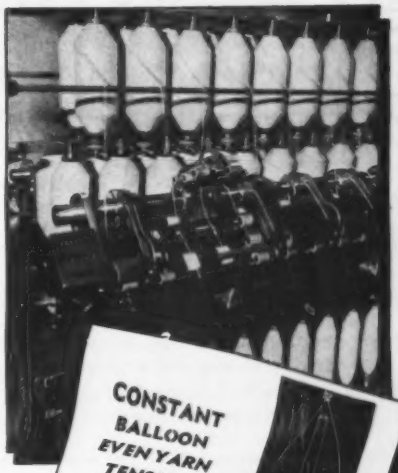
The only frame with

(1) *Pneumatic weighting for drafting arrangement*

which offers you the advantage of an easy adaptation of the top roll pressure to suit any stock to be processed.

Instantaneous pressure release by the mere opening of an air valve; saves cots over longer stops.

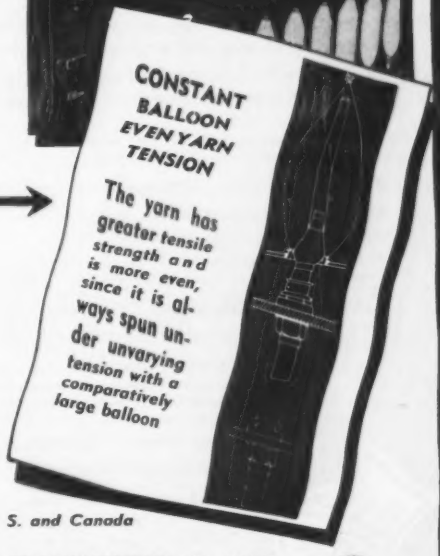
Simplified design of drafting arrangement owing to the entire absence of caps.



and

(2) *Moving Spindle rail* →

for the formation of *large packages* thus effecting considerable savings in the subsequent winding process. Larger ring diameters and longer lifts are only feasible if the differences in the yarn tension remain within practicable limits. The action of the movable spindle rail equalizes the differences in the yarn tension throughout the entire build of the cop.


CONSTANT
BALLOON
EVEN YARN
TENSION
The yarn has greater tensile strength and is more even, since it is always spun under unvarying tension with a comparatively large balloon

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AMERICAN TEXTILE ENGINEERING, INC.
ARLINGTON, NEW JERSEY, U. S. A.

No. 1 of a series introducing Rieter Products to the Textile Industry

Bemberg Rayon Sheers

6 reasons why you gain by their fame!

1. MULTI-MILLION VOLUME—For 15 years the market has constantly expanded. Over *35 million yards* of Bemberg Rayon Sheers are now sold annually . . . meaning close to 12 million satisfied customers in one year! Newly important is Bemberg's rapidly growing success in the junior and blouse fields. It all creates a whopping big ready-made market for you.

2. UNIQUE CHARACTER—The only cuprammonium rayon yarn produced in this country, Bemberg's exclusive "stretch-spinning" process gives it that remarkable fineness-with-strength.

3. UNQUESTIONED QUALITY—Every fabric carrying the Bemberg Certified Tag has passed *nine* separate quality tests in the laboratories of the U.S. Testing Company. Exactly 3450 individual printings were tested in the first six months of this year!

4. DEPENDABLE WASHABILITY—Due to the high standards of the Bemberg Certification Program, women know they can count on the absolute washability of Bemberg Sheers.

5. FAMED COOLNESS—Bemberg Sheers are *matchless* for cool comfort because the extra smoothness and evenness of the yarn permits unhampered air penetration.

6. PHENOMENAL PROMOTION—Stores back the Bemberg name with tremendous, ever-increasing promotion. In just the first half of this year, retailers featured Bemberg in 24,000 individual advertisements totaling almost seven *million newspaper lines*—an increase of more than a million lines over the same period last year. This six-months' advertising cost retailers $1,140,350 at their rates.* A terrific boon to all who make and sell Bemberg Sheers!

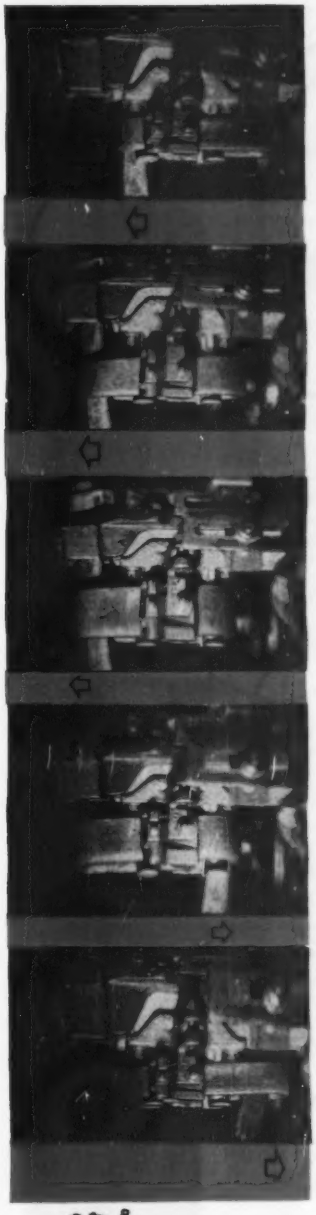
It all boils down to one vital point—BEMBERG MEANS BUSINESS

BEMBERG®

Aristocrat® of Rayon Yarn

* All figures compiled by the Advertising Checking Bureau

American Bemberg • Main Office: 261 Fifth Avenue, New York 16, N. Y. • Plant: Elizabethton, Tennessee



Follow-thru with Leather

see how the Hairitan® cushions the stick at each end of its stroke

ENDLESS CHECK STRAP

"Follow-thru" cushions the fireball pitch! . . . and the Hairitan Endless Check Strap cushions the picker stick as it approaches each end of its stroke.

These frozen-action photographs, taken at 1/20,000th of a second, show a newly installed endless check strap on a Draper X2 loom doing 175 picks a minute. Notice that this brand new strap already functions perfectly, cushioning the picker stick to enable picker and shuttle to move to end of lay without shuttle bounce. Notice the free sliding action, with tension uniform on each side of the stick — and also the perfect way in which the strap conforms to the angle of the stick.

The Hairitan Endless Check Strap is made of a single piece of choice quality Hairitan leather, folded double and cemented. It can be furnished hair-on or hair-off, in the standard lengths required for each Draper Loom for which the necessary fingers are available.

The Hairitan Endless Check Strap is an important member of the Orange Line team of loom leathers that work together to *give you more profit.*

The new catalog of G&K-DIXIE Textile Leathers proves, with high-speed photographs, the balanced follow-thru team performance of Orange Line Leathers. Send for your copy and enjoy this new freedom from bang-off!

GRATON AND KNIGHT

DIXIE LEATHER CORPORATION

Endless Check Strap

FAMOUS ORANGE* LINE TEXTILE LEATHERS

GRATON & KNIGHT COMPANY, WORCESTER, MASS. • DIXIE LEATHER CORPORATION, ALBANY, GEORGIA *Affiliate*

GIVE THE LADY WHAT SHE WANTS

Everywhere, more and more, she *Insists on Twist*. She's found that 15-deniers from twisted nylon give her more stocking comfort, greater protection against snags, more stretch. They have that duller finish she likes and do not wrinkle at the knees and ankles.

It's good business to give the lady what she wants. When she *Insists on Twist*, yours will be the nylons she takes—if the yarn is twisted. Let Oscar Heineman do it for you.

OSCAR HEINEMAN CORPORATION

DIVISION OF AETNA INDUSTRIAL CORPORATION

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Twisted 15-denier promoted twice weekly on ace TV shows, WNBT and WJZ-TV, New York and WENR-TV, Chicago

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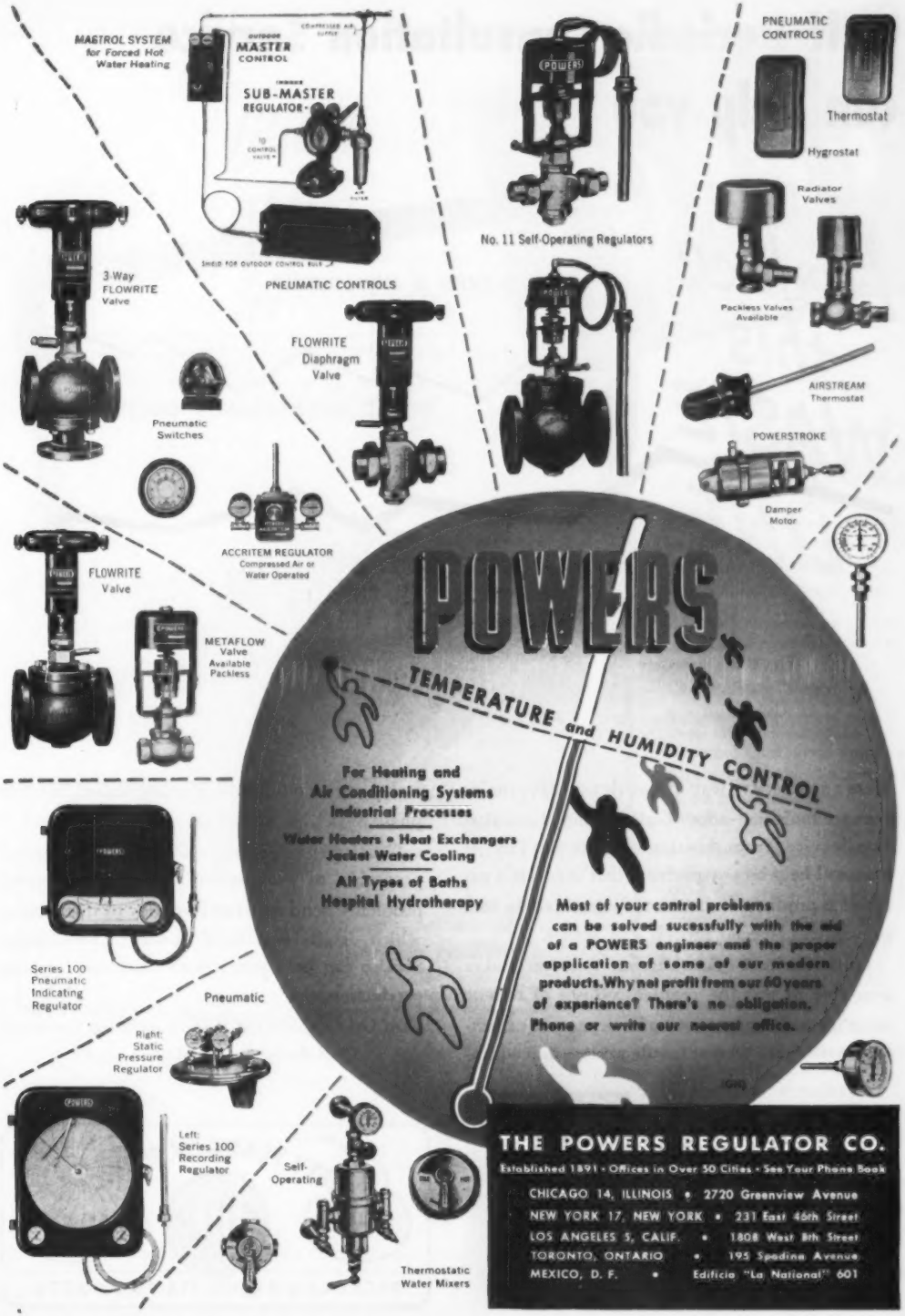
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Most of your control problems can be solved sucessfully with the aid of a POWERS engineer and the proper application of some of our modern products. Why not profit from our 60 years of experience? There's no obligation. Phone or write our nearest office.
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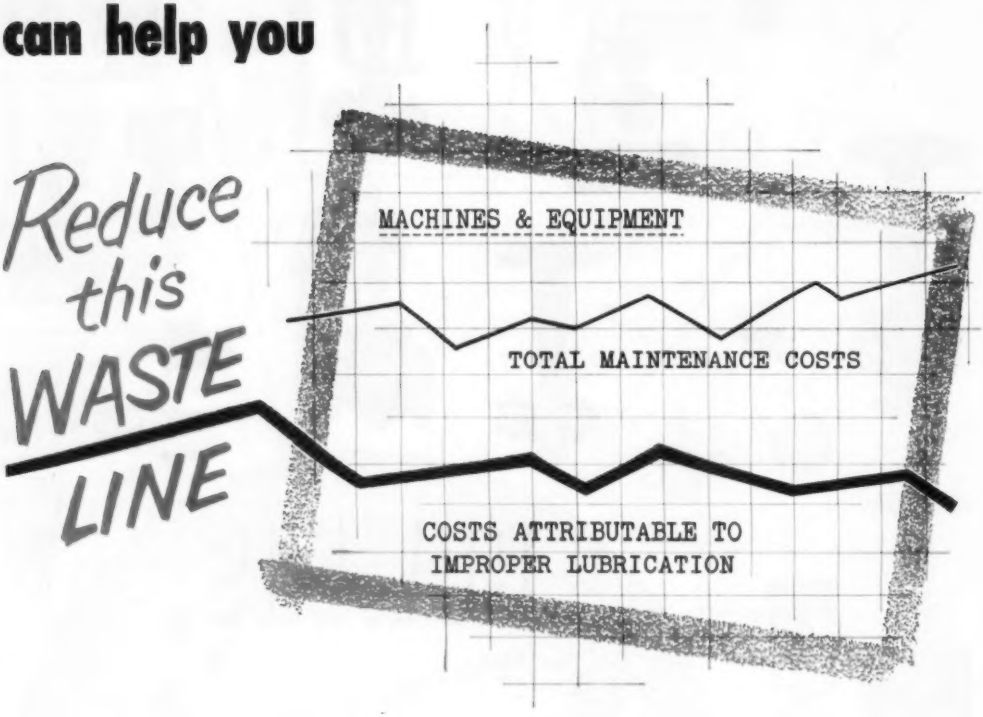
Gulf Periodic Consultation Service can help you

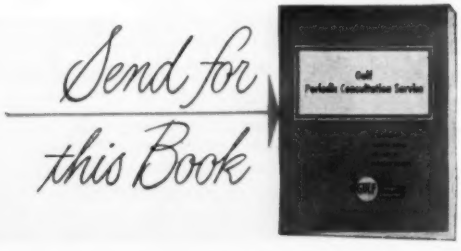


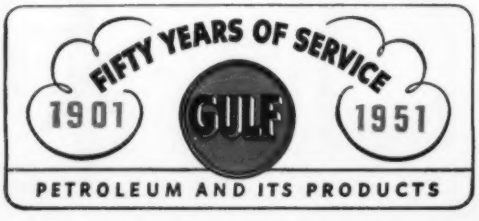
Here's an effective way to slim down heavy maintenance budgets—adopt Gulf Periodic Consultation Service. From this single source you can get practical help on any problem that involves a petroleum product—lubricants, fuels, solvents, rust preventives, special process oils, waxes.

Gulf Periodic Consultation Service makes available to you the regular counsel of one or more trained engineers who have years of experience with every type of textile process and equipment, and technologists who are skilled in every phase of petroleum science.

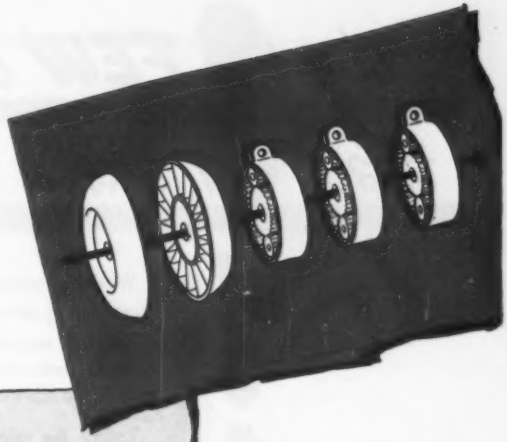
This knowledge and experience can be applied profitably to your operating and maintenance problems. Send for your free copy of the booklet which details *how* Gulf Periodic Consultation Service can help you reduce costs and improve production.

Gulf Oil Corporation · Gulf Refining Company
Gulf Building, Pittsburgh 30, Pa.





giant steps in industry



Above, you see an up-to-date automatic gear shift... a brilliant engineering feat that gave car owners shift-free driving. An achievement that revolutionized automobile performance since its introduction ten years ago!

At your left you see an equally remarkable mechanism... Industrial Rayon Corporation's "thread advancing reel," an important element of the renowned Continuous Spinning Process... herald of a new day in the rayon industry.

On this reel I R C produces a virtually flawless yarn in miraculously little time. Yarn so uniform it set a new standard of quality for mills, cutters, converters throughout the entire world. A process so valuable it has been adopted by producers in Great Britain, France, Switzerland and other leading countries. A process so far ahead of its time, that today, 12 years after its introduction, it still remains unsurpassed.

I R C is proud to have created this spectacular "thread advancing reel." If and when another rayon miracle appears... chances are, I R C will have a hand in it!

Industrial Rayon Corporation **IRC**

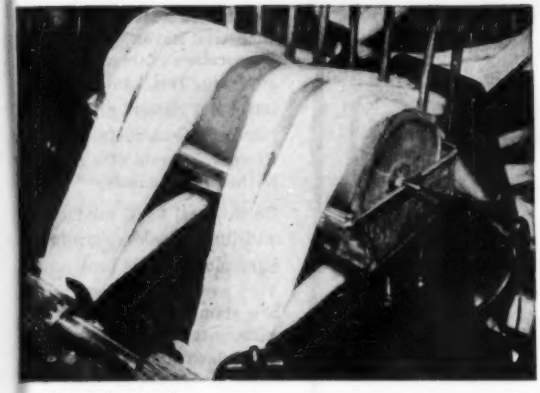
Cleveland, Ohio · Sales Office: 500 Fifth Avenue, New York 18, N. Y.

the FEW extra ¢ents that make a LOT of sense

When it comes to producing worsted yarn, there is always this important question: Should a spinner spend a few more cents than absolutely necessary when processing top, to try and achieve more efficient production and better finished products? In the case of Nopco* 1656-R, the answer is "yes".

Today, the price of top is the highest in history. Thus the few additional cents involved in the purchase of Nopco 1656-R become insignificant in the face of over-all costs. Moreover, the unique advantages afforded by this remarkable oil far outweigh its price differential when compared to alternatives. Just consider:

NOPCO* 1656-R...



1. ***provides excellent lubrication and eliminates static in worsted sliver. Result: no fly from top treated with this oil—fewer ends down in spinning and winding—much less brush waste;***
2. ***increases the drag, and thereby gives a better draft—resulting in more even and cleaner yarn;***
3. ***scours out with phenomenal ease—actually converting into suds when used with alkali, polyphosphate and water;***
4. ***applies equally to all production systems —American, Bradford or French—and is extremely advantageous on pin drafters.***

*Reg. U. S. Pat. Off.

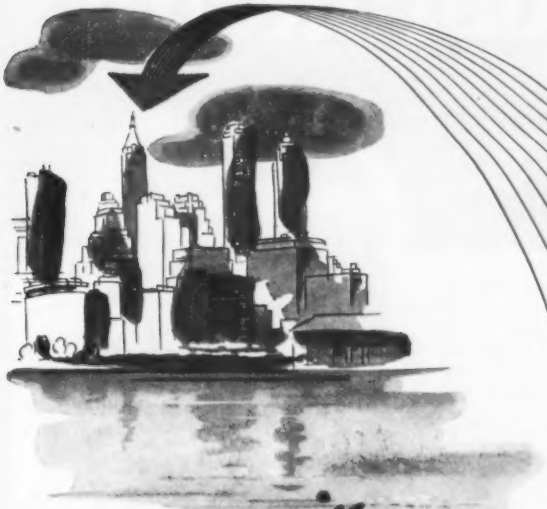
Yes, it will profit you to use Nopco 1656-R wherever you employ a lubricant in your top-processing procedure. And it will profit you to specify Nopco 1656-R, as a number of spinners already do, whenever you purchase oil-combed top. You'll pay a few more cents above "rock bottom" perhaps, but when you examine your finished yarns, you'll know you have produced high quality products with surprising economy.

NOPCO
EVOLVED THRU RESEARCH

NOPCO CHEMICAL COMPANY
HARRISON, NEW JERSEY
Branches: Boston, Chicago, Cedartown, Ga., Richmond, Calif.

Send for your FREE copy of this bulletin giving detailed information about Nopco* 1656-R

Original GÜSKEN looms often copied but never equalled

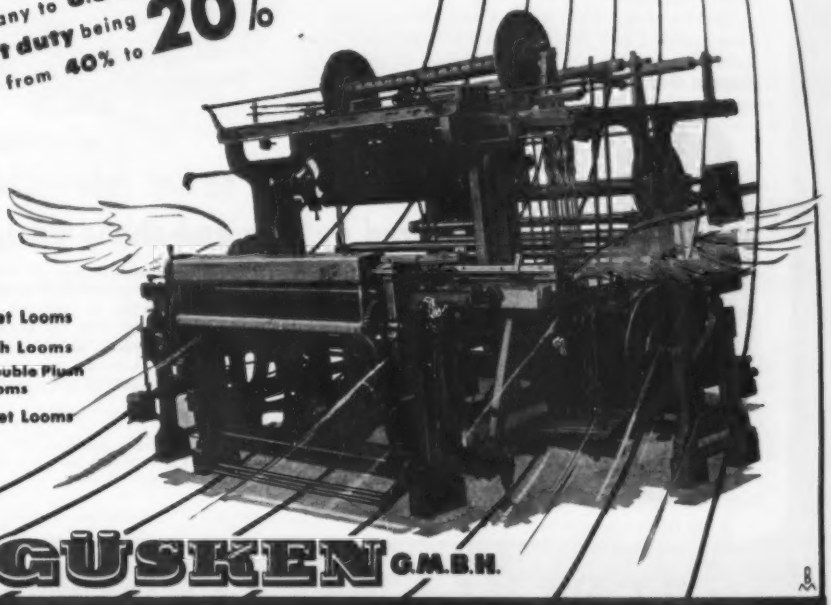


JGD

Now again

ORIGINAL GÜSKEN LOOMS

from Germany to **U.S.A.** the **import duty** being **reduced** from **40%** to **20%**



Double Velvet Looms
Double Plush Looms
Combined Double Plush and Wire Looms
Double Carpet Looms

JEAN GÜSKEN G.M.B.H.

MASCHINENFABRIK u. EISENGIESSEREI · DÜLKEN/RHLD. GERMANY

G-E loom motors

fit loom-load needs, keep output high!

IN STANDARD...

Here are two truly modern G-E loom motors—standard and flywheel—with speed and torque features specially designed to minimize speed fluctuations caused by the pulsating loom load. Even under the added picking load caused by today's heavier shuttles, they maintain loom speeds at a consistently high average level, permit maximum output of quality fabric.

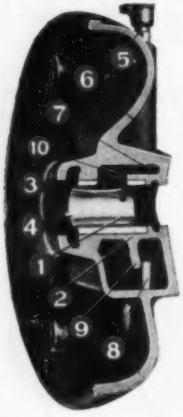
On many looms, the G-E flywheel loom motor permits still higher loom speeds by reducing speed variations even further. Start marks are minimized, loom operation is improved. And often you can use a G-E flywheel motor one size smaller than the standard loom motor.

Top performance—low maintenance!

New end-shield design, cast-iron totally enclosed construction for ample physical protection, G-E high-quality insulating materials for electrical reliability, and a host of convenience features for easy installation and maintenance —all these add up to top performance in both motors that closely matches exacting loom needs.

Find out more about these G-E standard and flywheel loom motors. Check with your G-E representative or your loom manufacturer, and write for Bulletin GEA-5011-C. ***General Electric Company, Schenectady 5, N. Y.***

...OR FLYWHEEL TYPES



Longer bearing life, easier lubrication both assured by new end-shield design

Here's the inside story:

One-piece bronze bearing lining (1) is solidly supported by end-shield casting (2), assuring accurate alignment. Set screw (3) anchors bearing lining to end shield casting. Bearing thrust surface (4) is all bronze.

Easily-accessible oil filler (5) speeds filling through large cast-in oil pipe (6). Oil flows directly to reservoir (7) through opening, with oil overflow standpipe (8) quickly indicating when full. Baffle (9) prevents yarn packing (10) from plugging standpipe or oil path.

How textile mill modernization improves fabric quality and cuts costs is shown in the new G-E More Power to America movie "Textiles Unlimited." Your nearest G-E office will gladly arrange a showing

GENERAL ELECTRIC

Rayon Reports

Actual size of book—designed to fit into wallet or vest pocket.

A few pages from "Fiber Facts" showing range of data included.

Vest pocket handbook now made available to textile executives

First of its kind—Fills long-felt need

For sometime there has been a decided need in the textile industry for a concise pocket handbook for ready reference on the job. To fill the gap Avisco has distilled essentials from the many, more bulky technical works now available . . . given them an attractive, readable format and presents them as "Fiber Facts."

This small book provides a means of keeping essential facts always at hand. Its 44 information packed pages contain not only data on Avisco and its products, but also comprehensive tables on such subjects as physical properties of rayon and other synthetic fibers, denier conversion, spinning twist calculation, and yarn requirements. In addition to a short atlas section, the contents include a glossary of textile terms, a bibliography of rayon publications, a calendar and space for making memoranda.

Avisco has limited quantities of this useful handbook for distribution to the textile industry. Write on your firm's letterhead for your copy.

MAKE USE OF *Avisco*® 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

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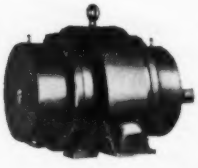
GUARD YOUR PRODUCTION AGAINST the Hazard of SPLASHING LIQUIDS

WITH

Century SPLASH PROOF MOTORS

Century 7½ HP Type RS Single Phase Repulsion Start Induction Brush Lifting Splash Proof Motor.

1 to 7½ HP Direct Current Splash Proof Motor.



150 to 400 HP Type SC Squirrel Cage Induction 3 Phase Splash Proof Motors.

30 to 100 HP Type SR Slip Ring Induction 3 Phase Splash Proof Motors.

1 to 125 HP Type SC Squirrel Cage Induction 3 Phase Splash Proof Motors.

3 to 25 HP Type SR Slip Ring Induction 3 Phase Splash Proof Motors.

1 to 20 HP Type CS Capacitor Start Induction Single Phase Splash Proof Motor.

Keep the vital parts of your motors dry —even when the full force of a hose is turned directly on them. Century Splash Proof motors eliminate production losses due to dripping or splashing liquids or falling solids. They also protect against rain, snow, sleet or hail on outdoor installations.

Century Splash Proof motors are available in a wide range of types and sizes for all popular applications. Other types and ratings are available to meet your electric power requirements. You can specify Century motors with confidence.

Century motors are built in sizes ¼ to 400 horsepower.

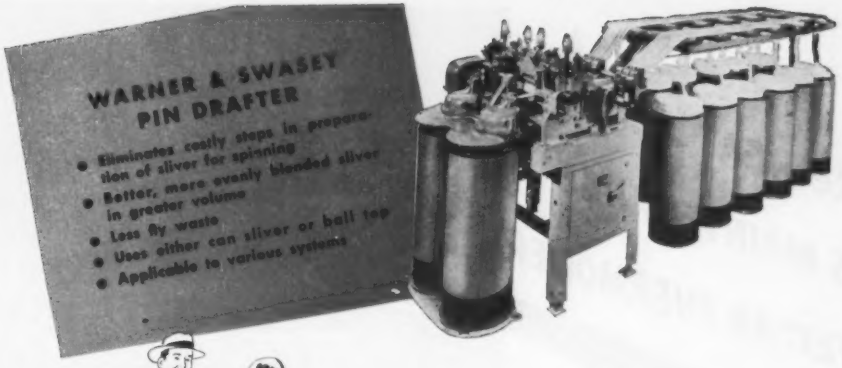
697

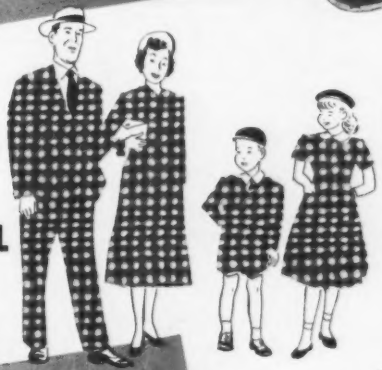
Century C MOTORS

CENTURY ELECTRIC [illegible] 50TH YEAR IN THE ELECTRICAL INDUSTRY

CENTURY ELECTRIC COMPANY, 1806 Pine Street, St. Louis 3, Missouri

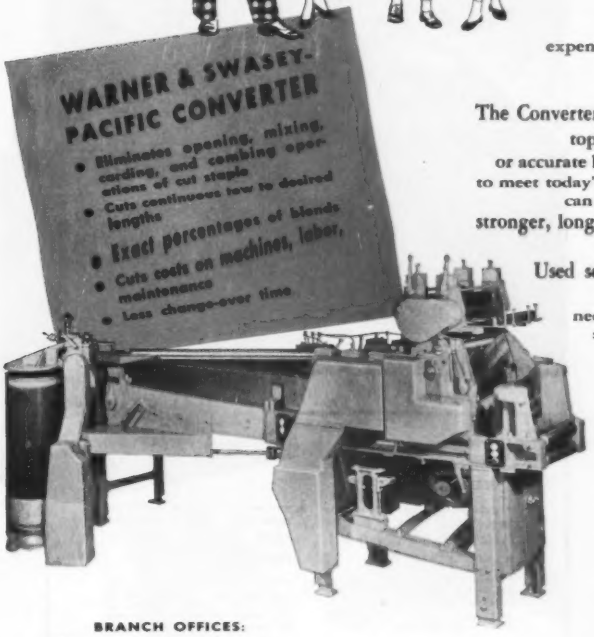
Offices and Stock Points in Principal Cities


WARNER & SWASEY
PIN DRAFTER
• Eliminates costly steps in preparation of sliver for spinning
• Better, more evenly blended sliver in greater volume
• Less fly waste
• Uses either can sliver or ball top
• Applicable to various systems



Wool or no wool...

THEY STILL NEED QUALITY CLOTHING!


WARNER & SWASEY-
PACIFIC CONVERTER
• Eliminates opening, mixing, carding, and combing operations of cut staple
• Cuts continuous tow to desired lengths
• Exact percentages of blends
• Cuts costs on machines, labor, maintenance
• Less change-over time

● Suitable replacement fabrics for scarce, expensive wool *must* be found to clothe this family —at a price they can afford!

The Converter and Pin Drafter help meet this demand for top quality fabrics by supplying synthetic sliver or accurate blends of wool and synthetic sliver—in volumes to meet today's huge requirements. A wide variety of fabrics can be made from these blends—materials that are stronger, longer lasting, shrink resistant, and less expensive.

Used separately, or in combination, these machines cut costs by eliminating many operations necessary in conventional systems of preparing sliver for spinning. Call in our Field Engineer in your territory for complete details—he'll be glad to show you how they can add new profits to *your* operation.

BRANCH OFFICES:
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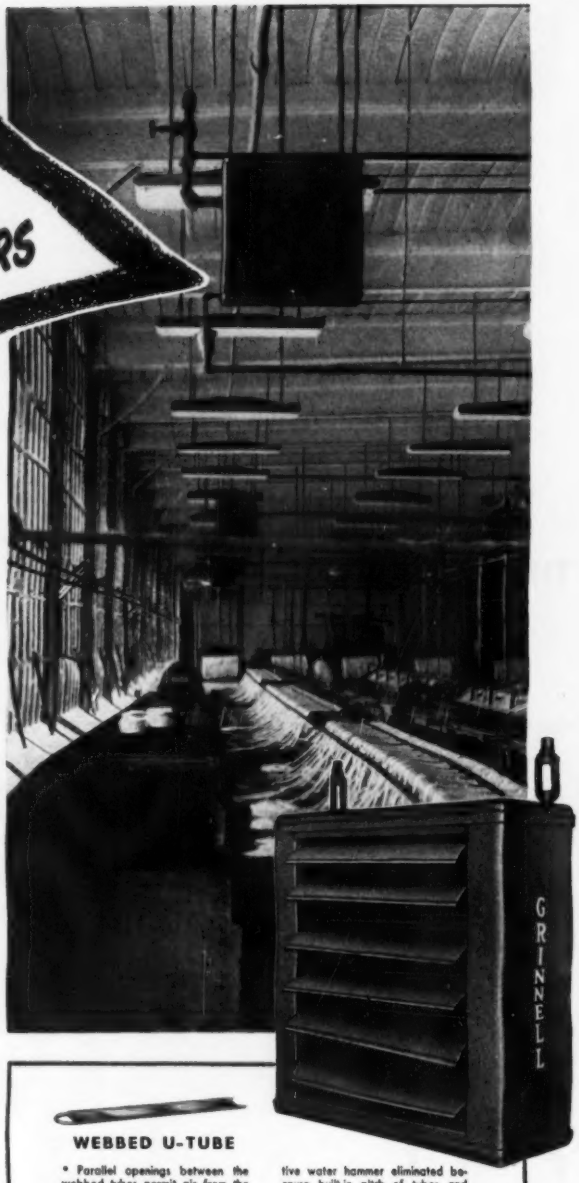
Candler Building, Atlanta, Ga.

WARNER & SWASEY
TEXTILE MACHINERY DIVISION

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS . . . WITH A WARNER & SWASEY

MORE HEAT . . . LESS MAINTENANCE with TEXTILE THERMOLIERS



The record is clean! Whenever Textile Thermoliers have been installed in a mill, no matter how severe the conditions of lint and fly, the results have been the same . . . more heat, less maintenance.

The Textile Thermolier's special heating element is the answer. It consists of a series of webbed, pitched U-tubes parallel to one another and assembled into a single header. An extension of the web on the trailing side increases the heating area, while the absence of conventional fin edges minimizes the collection of lint, fly and dirt on the heating surfaces. Result: Textile Thermoliers stay cleaner, providing efficient heating with practically no servicing.

Avoid being caught "cold" next winter. Get all the facts on Thermoliers without delay.

WEBBED U-TUBE

- Parallel openings between the webbed tubes permit air from the fan to pass through and keep heating element clean.
- Safety and durability assured with leak-proof tube-to-header construction.
- Maximum capacity provided at all times and annoying and destructive water hammer eliminated because built-in pitch of tubes and internal cooling leg assures continuous drainage of condensate.
- Plain thermostatic trap, the simplest and least expensive kind of trap, made practical because of Thermolier's exclusive internal cooling leg.

GRINNELL

WHENEVER PIPING IS INVOLVED

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Where quality
is the
first consideration
in a fabric
there is
no substitute for

Celanese*
Acetate Rayon Yarn

*Reg. U. S. Pat. Off.

CELANESE CORPORATION OF AMERICA, 180 MADISON AVENUE, NEW YORK 16, N. Y.

Q: *What has multiplied Mr. X so many times over?*

A: COMPETITION

. . . which always begins in the Weaveroom

Time was, and not so long ago, when the average male clothing customer had one suit. He was wealthy if he was a "two-suiter."

And what has made him what he is today . . . a multiple-customer, and the best-dressed average citizen of any country in the world? *Competition* . . . which has brought the cost of a well-rounded wardrobe down within his reach, *and kept it there.* And that means looms that weave fabrics of such high quality, at such low cost, that year by year he gets more and more for his money.

That's why mills that are successfully competitive in today's highly fashion-fickle markets are those with thoroughly modernized weaverooms. And in these weaverooms are versatile, convertible C&K Call Box Looms, maintained at top operating efficiency with Certified C&K Loom Parts. *Now take note of this:* In the unmatched versatility of C&K Looms, if you have not explored it thoroughly, you may literally find "the acre of diamonds in your own back yard."

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Woven Fabrics

Crompton & Knowles LOOM WORKS

WORCESTER 1, MASSACHUSETTS, U. S. A.

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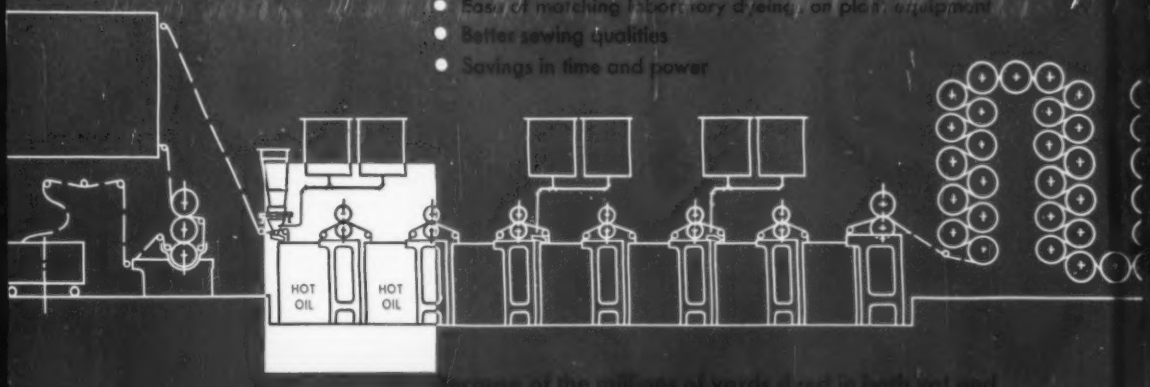
another GDC achievement

the hot oil process

A revolutionary process developed by the General Dyestuff Corporation for dyeing cotton fabrics.

Many plant runs have established the advantages of dyeing with this new and revolutionary process:

- Savings in dyestuffs and chemicals
- Complete control of shades
- Solidity of colors in pastel to dark shades
- Adaptability to long or short runs
- Ease of matching laboratory dyeings on plant equipment
- Better sewing qualities
- Savings in time and power



Because of the millions of yards dyed in both vat and sulphur colors by the HOT OIL PROCESS, General Dyestuff Corporation's Technical Department is able to answer your questions on its adaptability to your requirements.

Inquiries should be addressed to our nearest office.

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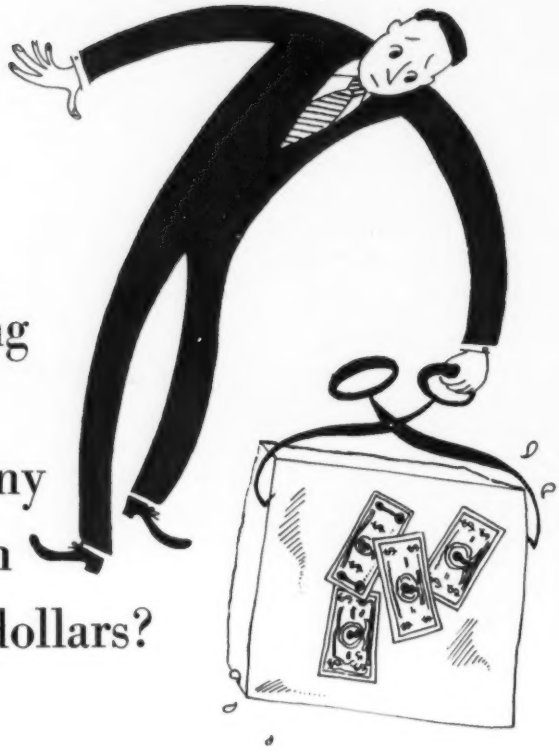

carrying too many frozen dollars?

It takes more money than ever to run a business today. You can't afford to have money frozen in receivables, where there is also a risk of loss. Factoring unfreezes working capital for you, takes over *all* credit risks so your profits can't ever melt away. Why not find out if we can help you too? Just write or phone.

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FACTORING FOUNDED ON SERVICE

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SAVE 5 WAYS

1. Replaces part of hydro . . . and is lower in cost.
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This Warwick extender for hydrosulfite ends for you the old shortcomings of the straight hydro stabilizer . . . low temperature decomposition, premature oxidation, and incomplete reduction. Hydrolux, replacing part of the hydro, acts as a stabilizer and catalytic agent for hydro, increases its efficiency, also acts as mild reducing agent.

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Antilustrole* dullers • Appramine* cationic softeners • Appretole* anionic softeners • Eumercin* mercerizing assistants • Formaset* textile resins • Lanole* tar and grease removers • Organosol coatings for textiles and paper • Plastisol for coating and molding • Setole* textile resins • Sulfanole* synthetic detergents • Suntone* pigment printing colors for textiles and plastics • Warcofix* color fixatives • Warco* GFI gas fading inhibitor • Warcolene* finishing oils • Warconyl* fire retardants • Warcosan* wetting and rewetting agents • Warcosol* penetrants • Weave-Lok* non-slip finish.

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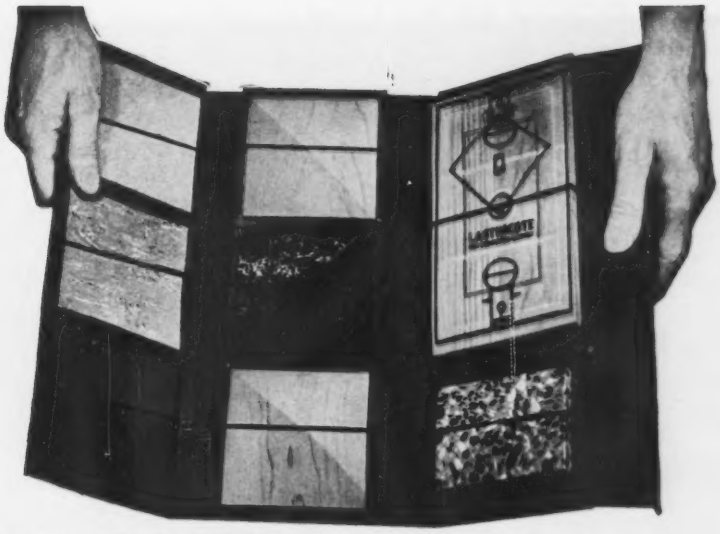
precision machine tool field!

Ex-Cell-O has been making precision parts to customers' specifications for close to 30 years. Today, these Ex-Cell-O products include parts for the textile industry . . . from spindles and various small parts to large assemblies. Ex-Cell-O has the facilities—machines, heat treat, assembly, and inspection—to produce your precision parts economically, in small or large volume, and in accordance with your delivery schedule. For a quotation, send a part blueprint to Ex-Cell-O Corporation in Detroit today.

Bulletin No. 26181 describes Ex-Cell-O's textile products. Write now for your free copy.

EX-CELL-O CORPORATION DETROIT 32

XLO



VISIBLE PROOF that may save you the cost of a new floor!

A professional kit—specially designed for *visual comparison*. Contains virtually every type of flooring made from linoleum to terrazzo! One-half of each flooring sample is untouched—while the other half is coated with the West sealer or finish formulated to preserve the surface indefinitely. Select the sample that applies to you. Inspect the treated and untreated surface. Scratch it. Burn it. Soak it. Choose the finish that meets your requirements—without moving from your desk!

Now make the only true test. Pick one or more test patch sites in your heavy traffic areas. In front of washstands . . . doorways . . . elevators. Your West representative will *show your maintenance man* how to prepare the floor and apply the proper West finish. Or, if necessary, he'll roll up his sleeves and lay down the material himself! When the test period is over . . . you be the judge.

—And still the job isn't complete. As your West representative knows, the science of floor preservation is a three-fold job. Each step is vitally important to the continued beauty and long-wearing properties of your floors . . . all three are described in our booklet, "The Proper Care of Floors". A copy is yours for the asking. An actual demonstration is as close as your nearest West office. Just mail the coupon!

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☐ Please send a copy of "The Proper Care of Floors"

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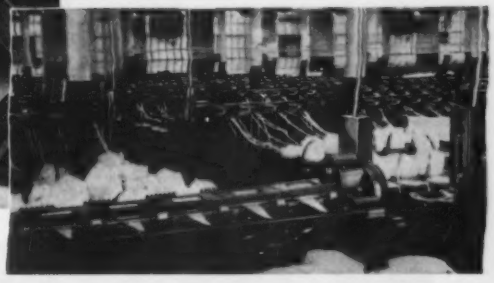
CUTLER-HAMMER
MOTOR CONTROL FOR THE TEXTILE INDUSTRY



for **EXPOSITION** at Atlanta.
(At left) Cutler-Hammer Magnetic Starters and Safety Switches in the opener room and (below) Cutler-Hammer Combination Starters on drawing frames.

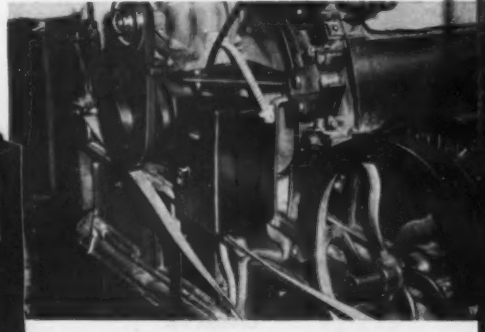
Where many machines must be made to work as one

When total production depends on the coordination of many machines in many departments as in the textile field, the selection of the Motor Control that stands guard over and guides these machines becomes of paramount importance. And it is of paramount importance to every conscientious textile executive what the Cutler-Hammer 59-year specialization in motor control can put in his hands by way of *immediate* advantages and the far more crucial advantage of *long-time dependability*. See what experience in the plants of the nation as the nation's number one motor control specialists can mean to your production. Specify Cutler-Hammer Motor Control in your very next purchase. CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wis.

for **WAUMBEC** at Manchester, N. H.
Cutler-Hammer primary resistance type Starters on spinning frames.

CUTLER-HAMMER CARD CONTROLLER
With integral drum type reverse switch

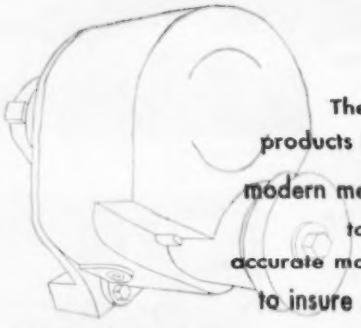
Here in one self-contained unit is all the control needed for a card . . . convenient pushbutton starting and stopping *plus* an integral reverse switch for cleaning and grinding. Card cannot be reversed accidentally or by any unauthorized person when controller case is padlocked. Easier to install. Easier and safer to use. Felt-gasketed against lint. Famous Cutler-Hammer Eutectic Element Overload Protection specially arranged to provide long starting time (required for cards) without loss of normal operating protection.



for a **NORTH CAROLINA** mill.
Specially designed Cutler-Hammer Controller for individual card drives.

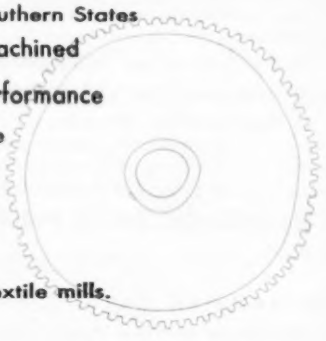
CUTLER-HAMMER
MOTOR CONTROL
C-H

Symbol of Quality...



The quality of Southern States products is the result of sound engineering, modern metallurgical and foundry practices to provide uniformity of specifications, accurate machining and rigid inspection to insure maximum operating efficiency.

The wide acceptance of Southern States Ball Bearing Comb Box, Southern States machine-molded cast tooth and precision-machined cut tooth Gears attests to the superior performance of Southern States textile parts. Your assurance of quality is guaranteed by an experience gained from more than thirty years of service to many of the South's leading textile mills.



Southern States Equipment Corp.

HAMPTON GEORGIA

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Largest Manufacturer of Cast-Tooth and Cut-Tooth Gears in the South

Here's how you can SAVE TIME AND EFFORT

on your Chainstitch Operations

... *with the new faster, easier-operating*

• No More Hand Oiling

Fully automatic lubrication supplies the correct amount of filtered oil to all bearings at all times. Minimizes wear—permits sustained high-speed operation—prevents under or over oiling—avoids soiling of work.

• Easier Threading

Thread handling and control are simple and natural—with no complicated mechanisms to adjust or get out of order. An exclusive thread tensioning device automatically measures and draws off the exact amount of thread needed for each stitch.

• Simplified Stitch Regulation

A simple button and window indicator on the arm eliminates guesswork as to stitch length and facilitates rapid change from one stitch length to another. The correct thread length for any stitch is easily adjusted by a movable eyelet on the head of the machine.

• More Production With Less Effort

Sustained speeds of up to 4500 stitches per minute are entirely practical where operating conditions and the nature of the work permit. The Type 1201 makes possible production rates never before attained with conventional chainstitch machines.

IDEAL FOR: Hemming Neckwear • Seaming Neckwear • Seaming Umbrellas • Sewing Facings on Underwear • Label Sewing • Basting on Clothing

FOR COMPLETE INFORMATION on the "WaG" Type 1201, flat-bed, single-thread chainstitch machine, ask for your free copy of Bulletin 941.

WILLCOX & GIBBS
Sewing Machine Co.

214 West 59th St., New York 10, N.Y.

For more information, write direct or use Reader Service post card.

LINT?

Improve weave room performance with this pair

Lint, dust, dampness will not affect the operation of these two. They're especially designed for weave room operation. Look at the extra features of the loom motor starter—designed in collaboration with leading textile manufacturers and the Associated Factory Mutual Fire Insurance Companies and the only starter approved by A. M. F. I.

Lint and dust are kept out! A special Neoprene gasket forms a positive, continuous seal between the box and cover. Pressure from cover clamp makes sure every crevice is filled with the pliable Neoprene gasket—positive assurance that combustible elements cannot enter the enclosure. Thus, one major cause of weave room fires is eliminated.

The loom motor, too, is totally-enclosed. No chance for lint to clog windings. Notice, too, there are no greasing nipples or cups on the motor. Life-Lines have pre-lubricated bearings . . . need no lubrication. Thus, outages from faulty lubrication are eliminated. There's no dripping grease to mar textiles.

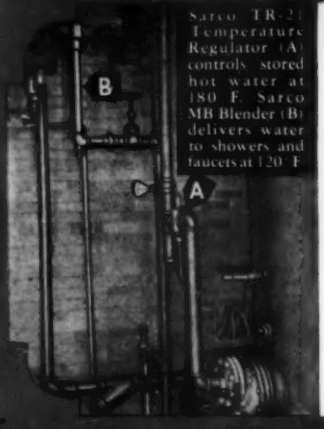
Together, these two cut motor outages and down time—save on maintenance time. Why not get the advantages of this combination? Ask your Westinghouse representative for complete details on Westinghouse motors and controls. Get a copy of the new Loom Motor Starter Booklet, B-5256. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-21654

YOU CAN BE SURE... IF IT'S Westinghouse

Life-Line

MOTORS and CONTROLS

Don't Waste It



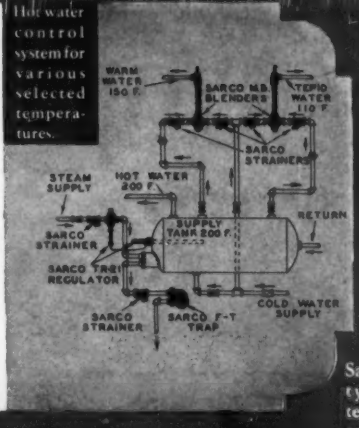
Sarco TR-2 Temperature Regulator (A) controls stored hot water at 180 F. Sarco MB Blender (B) delivers water to showers and faucets at 120 F.

In most plants and institutions hot water is stored for periodic use in process work, gang showers, group wash basins, etc.

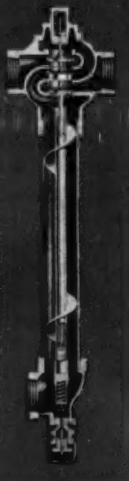
Much of this water (often carried at 180 or 200° F) is wasted by allowing manual temperature adjustment at the point of use.

Avoid buying additional Water Heater capacity by installing Sarco Water Blenders.

Blend It



Hot water control system for various selected temperatures.



Sarco Water Blender type MB provides tempered water at any desired constant temperature.

They add cold water to the hot from the storage heaters to secure the exact temperature desired at the point of use. In effect, storage capacity will be increased by preventing waste.

Catalog 802 tells the whole story.

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Empire State Building, New York 1, N. Y.
Represented in Principal Cities
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Sarco Water Blenders

344

Finishing headaches?

Quick cure!

Some finishers take a pill to get rid of their on-the-job headaches.

The smart ones get in touch with Monsanto for Catalyst AC, for in hundreds of finishing plants, millions and millions of yards of goods have been resin-treated with the help of Catalyst AC. Catalyst AC cures the resin as fast or faster than other catalysts. In a customer test on an 80 x 80 cotton fabric, for example, we found resin retention fully comparable to that obtained with other catalysts, but the hand was softer and wrinkle-resistance superior. Here are the actual data:

% Urea Resin Applied	Catalyst	% Resin Retention	Stiffness (Gurley)	Wrinkle-Resistance
8%	AC	85%	4.7	137°
8%	DAP	86%	4.9	131°
8%	Competitive Catalyst	84%	5.0	130°

In addition to these *performance* advantages, think of the advantages in your mill. With Catalyst AC, as you know, a urea-formaldehyde bath (36% solids) is stable for 24 or more hours—not only a convenience, but in some mills a real money-saving plus. Of course Catalyst AC is completely compatible with the usual softeners and penetrants.

For more information or technical help at your plant, please write MONSANTO CHEMICAL COMPANY, Textile Chemicals Dept., Everett Station, Boston 49, Mass.

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...saving lubricant
...saving bearing expense
...saving production time

WITH Farval you lubricate your machinery or equipment mechanically. Farval does the job quickly and dependably.

Any type of bearing surface, enclosed or open, can be Farval-lubricated with grease or oil. Measured charges of lubricant are metered to each bearing through the unique Dualine Valve, delivered under pressure from a central reservoir, either by a manually operated pump or one actuated by an automatic time-clock mechanism.

Farval is not a new idea. It has proved its value in service over a 23-year period, protecting millions of bearings in every phase of industry—in manufacturing plants, mining and quarrying operations, transportation—wherever there are bearings that have to be lubricated. Thousands of installations on mills, presses, conveyors, cranes, engines and other industrial equipment provide records of money saved. Savings take four forms:

1. Labor saving—Farval eliminates hand oilers. Minimum attention only is required—to inspect system, refill lubricant reservoirs, etc.

2. Lubricant saving—Correct amounts are used without waste, frequently reducing oil or grease consumption as much as 75%.

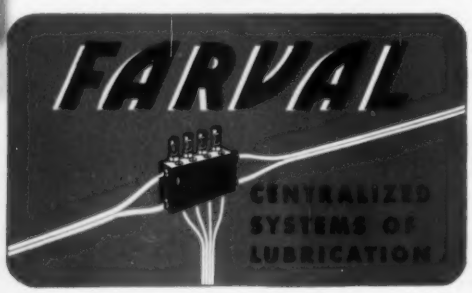
3. Bearing expense saving—No more burned out or damaged bearings with Farval protection. Expense of replacement eliminated.

4. Production time saving—Farval lubricates while equipment is running. No shutting down to oil. No taking a machine out of production to repair or replace bearings.

In short, savings are so positive that you soon recover the entire cost of a Farval system—and savings continue as extra dividends.

If you want figures on savings possible with Farval on the types of machines you operate, just write us. Tell us what equipment you have and ask for Bulletin 25. The Farval Corporation, 3268 East 80th Street, Cleveland 4, Ohio.

Affiliate of The Cleveland Worm & Gear Company, Industrial Worm Gearing. In Canada: Peacock Brothers Limited.



FARVAL—*Studies in Centralized Lubrication* No. 122

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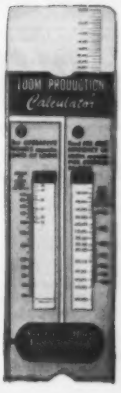
Veeder-Root PICK COUNTERS

SEND FOR THIS LOOM PRODUCTION CALCULATOR

Handy pocket "slip-stick" enables you to make a quick check . . . at any time . . . on whether your looms are running up to par.

In column 1, set the number of operating hours opposite the ppm of the loom. Then in column 2, read the figure for Percent Efficiency of Loom, *opposite the Pick Counter reading.*

In times like these, this easy-to-use Calculator is especially valuable...helps to get the best results both from your looms and from your Veeder-Root 2-3 Convertible Pick Counters. Send for it today.



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Non-lubricating Top Rolls for Back and Middle Lines*

- eliminate all lubricating effort.
- give much cleaner yarn, due to complete freedom from lubricant.
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*Not for front line use.

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* . . . like sidewalks and pavements, gasoline and petrol, we say it differently, but mean the same thing. Textile finishers on both sides of the Atlantic mean the same thing when they say DALGLISH – finishing machinery designed to do a particular job with speed, thoroughness and low operating costs.

* They probably know the name best allied to Overfeed Pin Stenters – fitted with Electronic or Hydraulic Guiders and Overfeed–the outstanding machines for finishing rayon and nylon, including spuns, crepes and locknits.

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TEXTILE MACHINERY MANUFACTURERS
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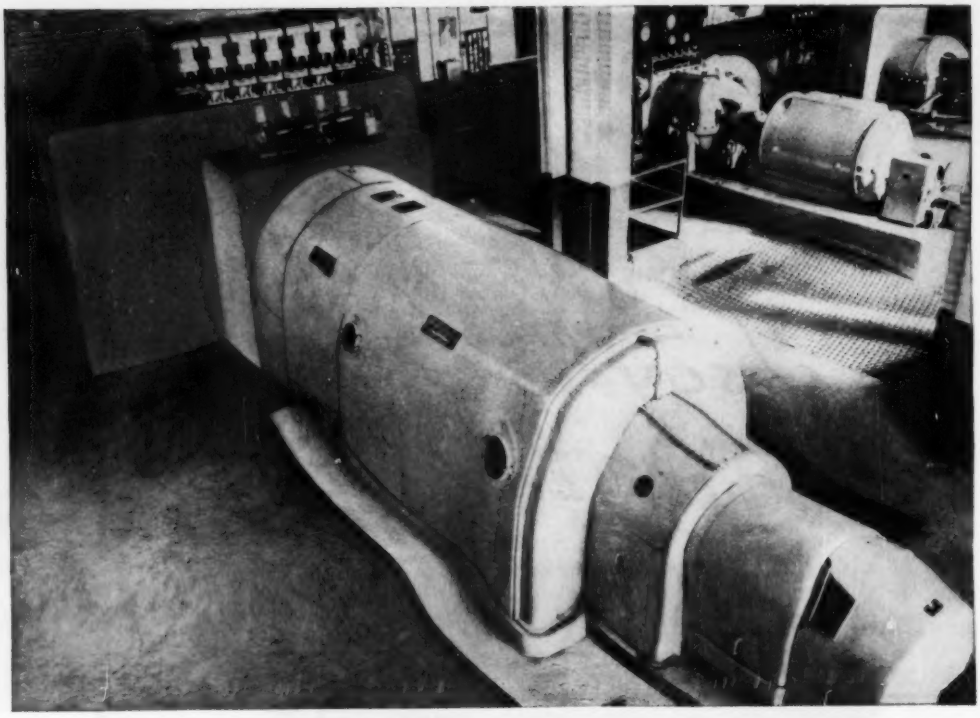

How Rock Hill and Worthington Balanced Steam and Power

During its fast growth, Rock Hill Printing and Finishing Company, Rock Hill, South Carolina, has made extensive changes in the power plant.

Since 1929 electrical demand has greatly increased. Also, plant process has called for large quantities of steam at 90-100 psi and at 15 psi pressure.

When a new 150,000 lb-hr boiler was installed, another Worthington 5000-kw non-condensing extraction-type turbine generator was also installed. This latest Worthington unit operates on steam at 230 psi, 575 FTT, and automatically extracts steam at 100 psi, exhausting at 15 psi back pressure.

The unit has sufficient flexibility between extraction and back pressure to handle variations in flow requirements and to carry an electrical load varying from 3000 up to an anticipated 5000 kw.

By purchasing a *Worthington* unit, Rock Hill also benefits from unit responsibility for design, assembly and performance.

Worthington builds turbine-generator sets in sizes up to 10,000 kw and in all types. For detailed proof that *there's more worth in Worthington*, call our nearest office or write to Worthington Pump and Machinery Corporation, Steam Turbine Division, Wellsville, New York.

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STEAM TURBINE GENERATORS

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Skates go to the rink (and from the store) in this H & D corrugated "luggage" box

It doesn't take an ice skater long to see that this is more than "just a box"—it's also a handy carrier for his skates. The result? Easier sales for clerks who sell Spalding skates packed in this bright, linen-finish corrugated box. Styled like a smart piece of airplane luggage, this H & D box helps provide the "plus" that turns shoppers into buyers.

The H & D Package Laboratory is ready to add a sales "plus" to *your* product, too, by creating a package with after-sales use—or by providing better display . . . cutting wrapping costs . . . giving extra protection . . . increasing multiple or tie-in sales. For free booklet, "Pack to Attract," write Hinde & Dauch, 5105 Decatur St., Sandusky, Ohio.

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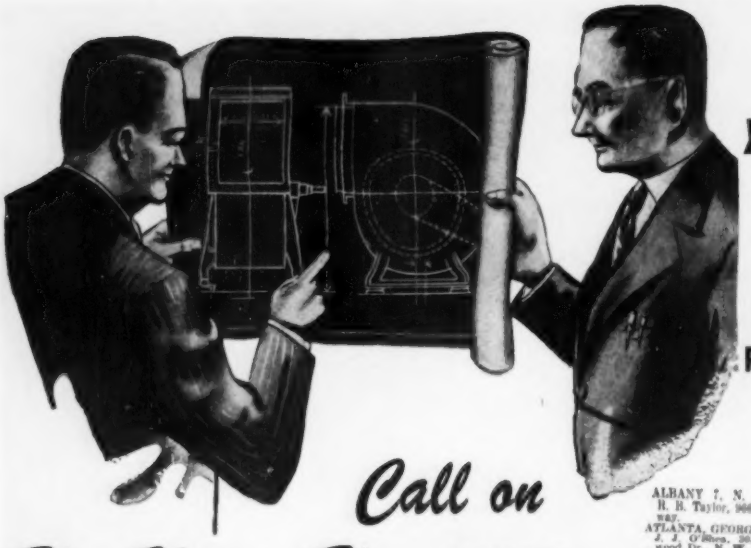

Your Nearby "Buffalo" ENGINEERING REPRESENTATIVE is on this list

Call on His Know-How WHEN THE PROBLEM IS AIR

To get the best possible results in your air handling, consult these sales representatives who can be of real help in working with your engineer and selecting exactly the right equipment. Not just "salesmen", "Buffalo" representatives are Graduate Engineers with one to five years of factory training. They know "Buffalo" Fans and Air Conditioning Units — and the jobs they are designed to perform best. And backing these men up are all the resources of the "Buffalo" home plant engineering staff as well as equipment that's been respected by industry for 73 years. Here's a sure way to make your air investment pay off. Take advantage of "Buffalo" experience in air handling and call your nearest sales representative.

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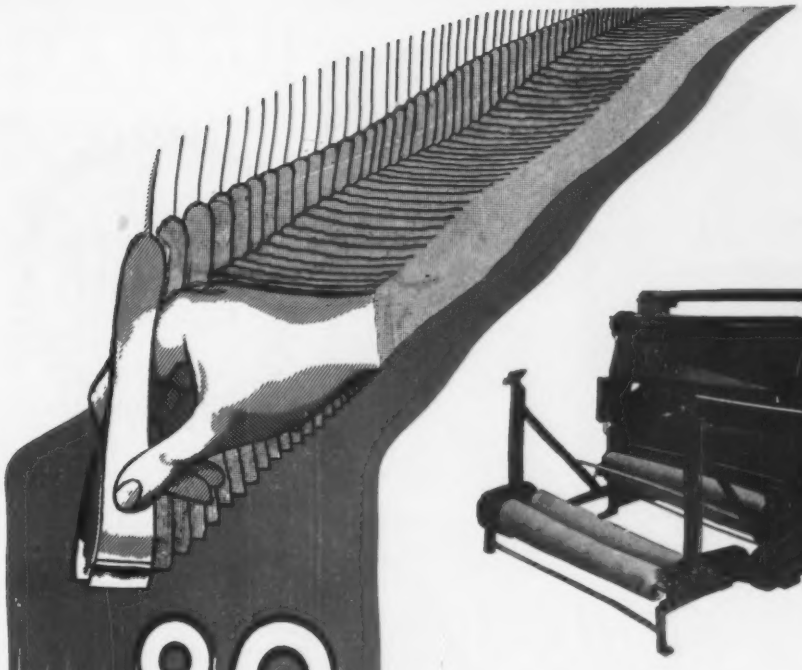

90 "Picker Power"

Picking or cleaning cloth with the Hermas AV Shear is thirty times as fast as hand picking.

A Hermas AV Shear will work twice around the clock each day, without stopping—something that would require 90 pickers for a three shift schedule. And you get cleaner, more uniform work!

Even if you manufacture varied weights of fabrics, you can profitably use this Hermas AV shear. Our automatic clothrest setting device enables you to shift from one weight of fabric to another with a single adjustment in 45 seconds!

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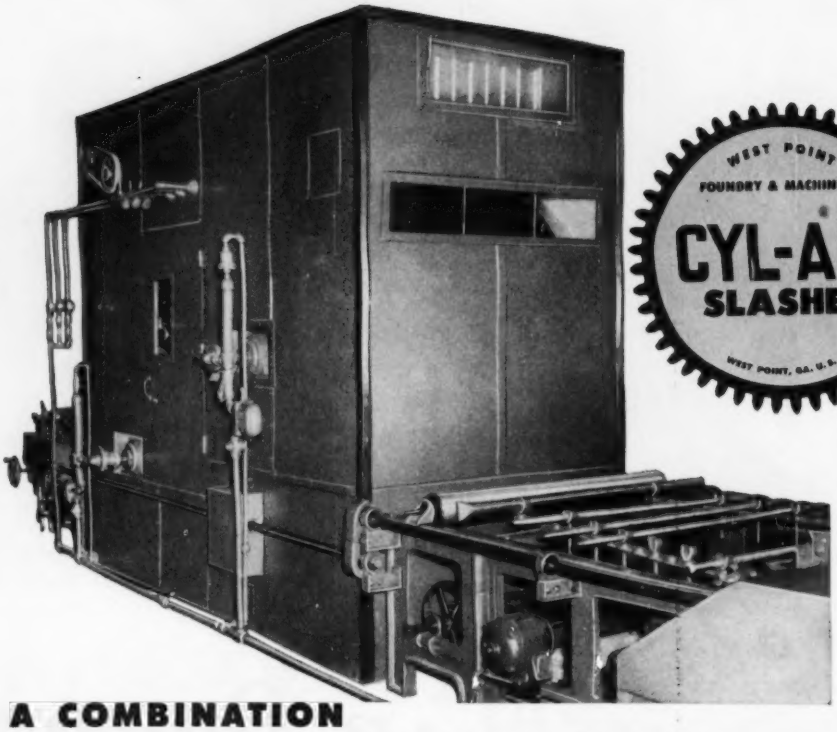

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CYL-AIR SLASHER

WEST POINT, GA. U.S.A.

A COMBINATION CYLINDER and HOT AIR SLASHER DRYER

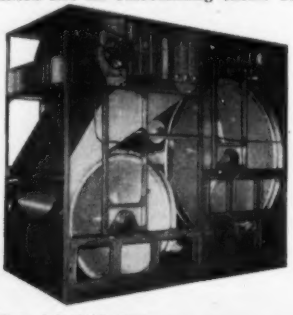
The CYL-AIR Slasher Dryer combines the advantages of cylinder and hot air drying in one efficient and compact unit. Its production rate is much higher than a conventional 2-cylinder dryer section, yet the CYL-AIR occupies no more floor space. It can be used with present head end, size box, and creel with very little change in conventional operating methods.

In the completely enclosed CYL-AIR Slasher Dryer, air is heated by three double-row steam coils, then circulated through the wet yarn and around the two cylinders by a triple unit centrifugal blower. A large percentage of the hot air is recirculated for better thermal efficiency.

The contact drying rate of the 5′ and 7′ cylinders of the CYL-AIR is greater than conventional type cylinders because of the insulated enclosure and the circulated hot air surrounding them. These welded, dished-head cylinders are made for steam pressures up to twenty-two pounds per square inch.

The CYL-AIR Slasher Dryer is designed for smooth operation and low maintenance cost. We will be glad to show you how the CYL-AIR can be easily adapted to your present slasher equipment.

The WPF&M CYL-AIR Slasher is one of the complete line of modern Slashers manufacturered by the WEST POINT FOUNDRY & MACHINE COMPANY—specialist in Slasher Room machinery and equipment.



INTERIOR OF THE CYL-AIR SLASHER DRYER

WPF&M WARP PREPARATION MACHINERY

Standard 2 and 3 Cylinder Slashers
Cyl-Air Slashers
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WPF&M Hi-Speed 4 Cylinder Slashers
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SLASHER MODERNIZATION EQUIPMENT

Hi-Speed Head Ends with Stretch Control
Standard WPF&M Head Ends
Multi-Motor Drives and Controls
Temperature, Speed and Tension Control Devices
Hi-Speed Size Boxes
Model 50 Size Boxes
Standard Size Boxes
Size Kettles and Equipment

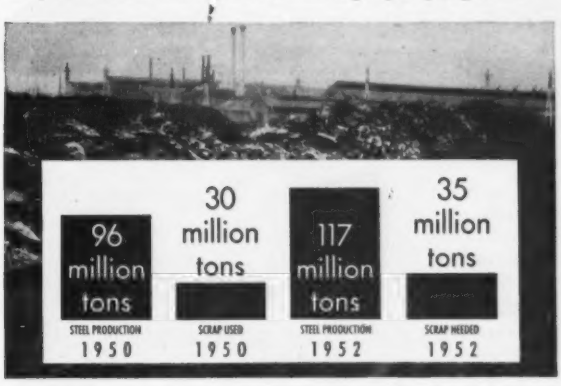
WPF&M

WEST POINT FOUNDRY & MACHINE CO.

WEST POINT, GEORGIA

LET'S FACE THESE FACTS ABOUT SCRAP | THEN ACT!

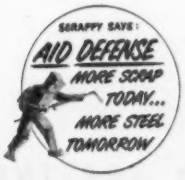
This is no "scare" campaign for more iron and steel scrap. But it boils down to a few simple facts: **1.** Scrap inventories are dangerously low in steel mills all over the country. **2.** More steel scrap is needed today than ever before because steel-making capacity is greater.



Present low scrap piles in steel mills are due to one thing—the growth of steel production to more than 100 million tons a year, which requires several million more tons of scrap than have ever been available. By the end of 1952 steel production will hit 117 million tons a year. Besides scrap available from steel-making operations, the industry will require 5 million more tons of scrap than were needed in 1950.

Top-management action in industry is needed to keep scrap flowing to steel mills. For example, many textile mill executives have named a permanent "salvage committee" for their plants and yards. This committee reports on all worn out or obsolete equipment, and management decides what should be sold.

It's a good idea for your committee to check every questionable piece of equipment too. If it is "just sitting around" and won't be needed again, call your scrap dealer. You'll be helping defense production. And you'll get high prices for your old iron and steel scrap by selling now.



ARMCO STEEL CORPORATION

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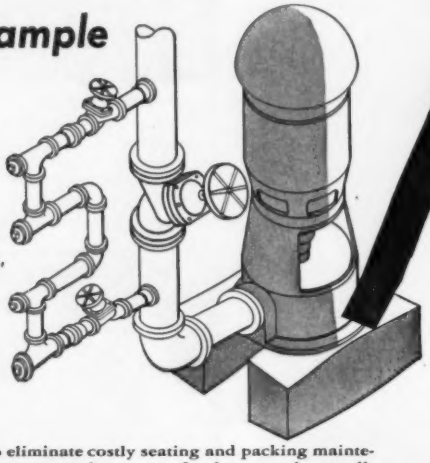

The Installation—
Barr Rubber Products Co.,
Sandusky, Ohio

PROBLEM: To eliminate costly seating and packing maintenance, and frequent replacement of valves on plant well-water pump. Valves previously used highly unsatisfactory, having maximum life of 6 months.

WORKING CONDITIONS: Sulphur content of water extremely high. Valve constantly exposed to severe corrosive and erosive effects. Operated infrequently; yet easy operation, positive seating are prime requisites.

SOLUTION TO PROBLEM: Crane Packless Iron Body Diaphragm Valves featuring separate disc and diaphragm design. Three-inch No. 1611 flanged end valve on main discharge; ¾-inch No. 1610 screwed end valves on by-pass.

RESULT: While other valves lasted only 6 months or less, Crane Diaphragm Valves show no effects of service, after more than a year. They operate smoothly . . . seat tightly . . . no maintenance whatsoever needed to date!

Another typical demonstration of superior quality, and the low-cost performance of Crane Valves. That's why . . .
More CRANE VALVES are used than any other make!

...Choose Dependable CRANE VALVES

No. 1611 Crane Iron Body Diaphragm Valve —one of a full line suited for many services. Literature on request from your Crane Branch or Crane Wholesaler.

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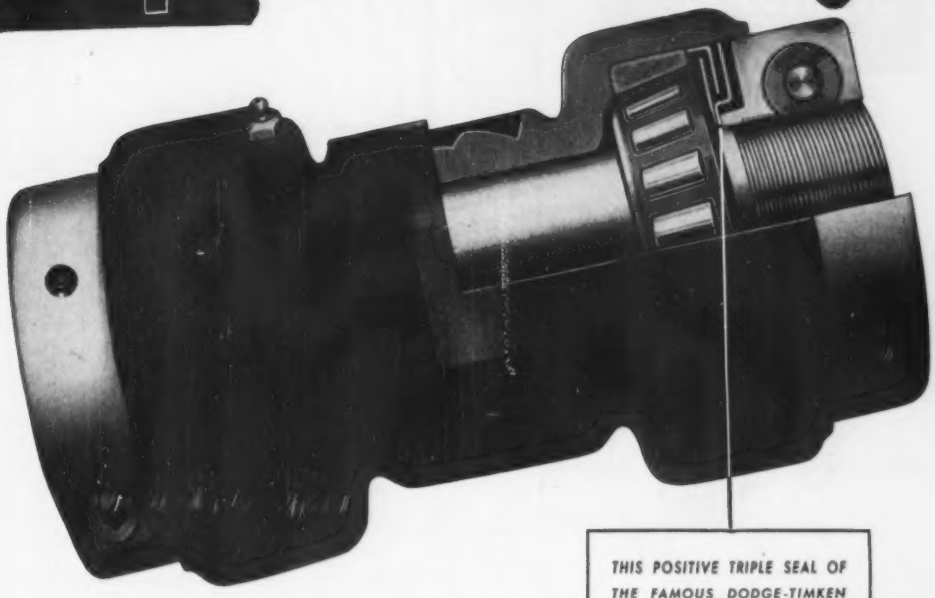
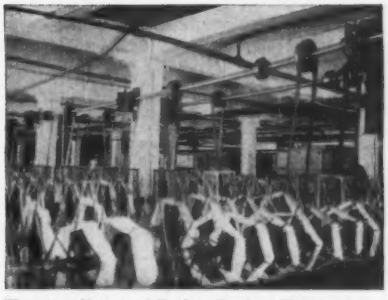
VALVES • FITTINGS • PIPE • PLUMBING • HEATING

Stops Oil Damage!



THIS POSITIVE TRIPLE SEAL OF THE FAMOUS DODGE-TIMKEN TYPE C BEARING ELIMINATES OIL DRIP... HERE IS THE IDEAL BEARING FOR TEXTILE MILL USE!



This installation of Dodge-Timken Hanger Bearings protects quality and profits. Special seals prevent oil leakage on the product, reduce "seconds." Bearings remain properly lubricated, saving labor.

Is OIL DRIP eating holes in your profits? To keep the lubricant where it belongs—*inside the bearing*—switch to Dodge-Timken. These famous bearings, noted throughout the world for quality, have proved themselves in millions of industry's toughest jobs.

The type C Dodge-Timken Bearing is especially adapted to use in the textile field. Its indestructible steel seal positively prevents lubrication leakage—definitely cuts a mill's loss from "seconds."

Available from distributors' stocks—in shaft sizes from 1-7/16" to 3-15/16". Completely assembled, factory adjusted, pre-lubricated and ready to install on the shaft for a minimum of 30,000 hours of uninterrupted service. Call your nearest Dodge Transmissioneer. Or write us for detailed bulletin.

DODGE MANUFACTURING CORPORATION
1400 Union Street • Mishawaka, Indiana

CALL A DODGE TRANSMISSIONEER. He's factory-trained to help solve your power drive problems. Look for his name under "Power Transmission Equipment" in your classified telephone directory.

DODGE
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"STANDARD" recommends STANDARDS*

UNBRAKO®

SQUARE HEAD SET SCREWS

Standard points are self-locking knurled cup and half dog.

Their heads "won't twist off" and they have the famous self-locking knurled cup point which "won't shake loose." These two features make them particularly useful in "hard-to-get-at" places and on high-speed vibrating equipment.

★ One of a series listing Standard UNBRAKO Socket Screw Products sold by your local UNBRAKO Distributor. If you want reprints of this and other advertisements in the series, ask for them on your business letterhead.

SPS

STANDARD PRESSED STEEL CO.

JENKINTOWN 30, PENNSYLVANIA

NATIONAL COARSE THREAD

Class 3 Thread Fit is an "Unbrako" Standard

D Diameter	Threads per inch NC	L Length	Price per 100	Quantity per box
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	20	¾	4.90	100
	20	⅞	5.20	100
	20	1	5.50	100
	20	1¼	6.10	100
	20	1½	6.70	100
	20	1¾	7.30	100
	20	2	7.90	100
	20	2¼	8.50	100
	20	2½	9.10	100
	20	2¾	9.70	100
	20	3	10.30	100
5/16	18	½	5.35	100
	18	⅝	5.65	100
	18	¾	5.95	100
	18	⅞	6.25	100
	18	1	6.55	100
	18	1¼	7.15	100
	18	1½	7.75	100
	18	1¾	8.35	100
	18	2	8.95	100
	18	2¼	9.55	100
	18	2½	10.15	100
	18	2¾	10.75	100
	18	3	11.35	100
3/8	16	½	6.45	100
	16	⅝	6.85	100
	16	¾	7.25	100
	16	⅞	7.65	100
	16	1	8.05	100
	16	1¼	8.85	100
	16	1½	9.65	100
	16	1¾	10.45	100
	16	2	11.25	100
	16	2¼	12.05	100
	16	2½	12.85	100
	16	2¾	13.65	100
	16	3	14.45	100
	16	3¼	15.25	100
	16	3½	16.05	100
	16	3¾	16.85	100
	16	4	17.65	100
	16	4½	21.25	100
	16	5	24.85	100
7/16	14	½	7.40	100
	14	¾	7.90	100
	14	⅞	8.40	100
	14	1	8.90	100
	14	1¼	9.90	100
	14	1½	10.90	100
	14	1¾	11.90	100
	14	2	12.90	100
	14	2¼	13.90	100
	14	2½	14.90	100
	14	2¾	15.90	100
	14	3	16.90	100
	14	3¼	17.90	100
	14	3½	18.90	100
	14	3¾	19.90	100
	14	4	20.90	100
	14	4½	24.90	100
	14	5	28.90	100
1/2	13	½	8.90	100
	13	¾	9.40	100
	13	⅞	9.90	100
	13	1	10.40	100
	13	1¼	11.40	100
	13	1½	12.40	100
	13	1¾	13.40	100
	13	2	14.40	100
	13	2¼	15.40	50
	13	2½	16.40	50
	13	2¾	17.40	50
	13	3	18.40	50
	13	3¼	19.40	50
	13	3½	20.40	50
	13	3¾	21.40	50
	13	4	22.40	50
	13	4½	26.40	50
	13	5	30.40	50
	13	5½	34.40	50
	13	6	38.40	50
9/16	12	¾	11.40	100
	12	⅞	12.00	100
	12	1	12.60	100
	12	1¼	13.80	50
	12	1½	15.00	50
	12	1¾	16.20	50
	12	2	17.40	50
	12	2¼	18.60	50
	12	2½	19.80	50
9/16	12	2¾	21.00	50
	12	3	22.20	50
	12	3¼	23.40	50
	12	3½	24.60	50
	12	3¾	25.80	50
	12	4	27.00	50
	12	4½	29.50	50
	12	5	34.20	50
	12	5½	39.00	50
	12	6	43.80	50
5/8	11	⅝	12.50	50
	11	⅞	13.20	50
	11	1	13.90	50
	11	1¼	15.30	50
	11	1½	16.70	50
	11	1¾	18.10	25
	11	2	19.50	25
	11	2¼	20.90	25
	11	2½	22.30	25
	11	2¾	23.70	25
	11	3	25.10	25
	11	3¼	26.50	25
	11	3½	27.90	25
	11	3¾	29.30	25
	11	4	30.70	25
	11	4½	33.50	25
	11	5	36.30	25
	11	5½	41.90	25
	11	6	47.50	25
3/4	10	1	17.20	50
	10	1¼	18.90	50
	10	1½	20.60	25
	10	1¾	22.30	25
	10	2	24.00	25
	10	2¼	25.70	25
	10	2½	27.40	25
	10	2¾	29.10	25
	10	3	30.80	25
	10	3¼	32.50	25
	10	3½	34.20	25
	10	3¾	35.90	25
	10	4	37.60	25
	10	4½	41.00	25
	10	5	44.40	25
	10	5½	51.20	25
	10	6	58.00	25
	10	6½	64.80	25
	10	7	71.60	25
	10	7½	78.40	25
	10	8	85.20	25
7/8	9	1	21.50	25
	9	1¼	24.00	25
	9	1½	26.50	25
	9	1¾	29.00	25
	9	2	31.50	25
	9	2¼	34.00	20
	9	2½	36.50	20
	9	2¾	39.00	20
	9	3	41.50	20
	9	3¼	44.00	20
	9	3½	46.50	20
	9	3¾	49.00	20
	9	4	51.50	20
	9	4½	56.50	20
	9	5	61.50	20
	9	5½	66.50	20
	9	6	71.50	20
	9	6½	81.50	20
	9	7	91.50	20
	9	7½	101.50	20
	9	8	111.50	20
	9	8½	121.50	20
	9	9	131.50	20
1	8	1	40.00	20
	8	1¼	44.30	20
	8	1½	48.60	20
	8	1¾	52.90	20
	8	2	57.20	20
	8	2¼	61.50	20
	8	2½	65.80	20
	8	2¾	70.10	20
	8	3	74.40	20
	8	3¼	78.70	20
	8	3½	83.00	20
	8	3¾	87.30	20
	8	4	91.60	20
	8	4½	100.20	20
	8	5	108.80	20
	8	5½	117.40	20
	8	6	126.00	20
	8	6½	136.00	20
	8	7	146.00	20
	8	7½	156.00	20
	8	8	166.00	20
	8	8½	176.00	20
	8	9	186.00	20

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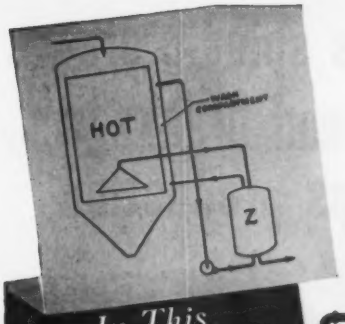
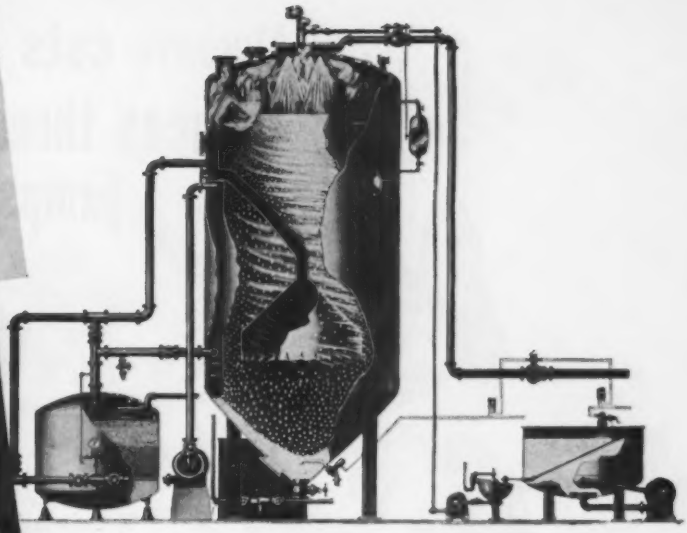


In This
WORTHINGTON
HOT-Z
Deaerating Type Water Conditioning System . . .



Built-In Annular Wash Water Compartment Supplies and Reclaims Backwash Water

Independent of the Softening Process

No other Hot Zeolite System offers you so many advantages as this Worthington Hot-Z System. A quick review of the vital facts will show you why.

As you probably know, Hot Zeolite beds require periodic expansion to minimize packing and friction loss, and to insure efficient contact of each Zeolite particle with its share of dissolved impurities. This need for bed expansion occurs not only during the regeneration routine, but also several times during the period between regeneration routines. That's why it is important for you to use clean, softened water, preferably at normal operating temperature, for the reverse flow or "backwash" operation.

Worthington does it!

The Worthington Standard Hot-Z System with its backwash feature provides a built-in annular wash water compartment that supplies and reclaims backwash water . . independent of the system's softening process. In this compartment, backwash water is cleaned and maintained at normal operating temperature.

This backwash feature pays off particularly in systems employing filters because it *makes filter beds last as long as eight years.*

Other advantages

Worthington Hot Process Systems come equipped with modern, direct contact vent condensers. This means, no more of the scaling trouble that made the old-fashioned shell and tube types such a nuisance.

In addition, Worthington Hot-Z Systems operate on low-priced lime and salt. That's why the average installation saves enough in chemical costs to pay for itself in 3 years.

Get all the facts!

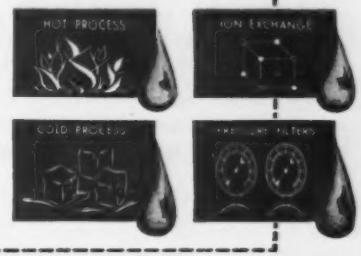
It will pay you to investigate the Worthington Hot-Z System thoroughly. Tell us your conditions of service and get our recommendation in terms of dollars and benefits. You'll find in our Hot-Z System, as in so much other equipment, *there's more worth in Worthington. Worthington Pump and Machinery Corporation, Water Treating Section, Dunellen, N. J.*

JI-1

WORTHINGTON

WATER CONDITIONING

Worthington Makes More of the Equipment for All Types of Water Conditioning Systems



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"We don't have to buy belts so often since we started using Condor Whipcord V-Belts," say users, "and we save on maintenance, need less inventory, and with all, get better power transmission!"

Long life is built right into every Condor V-Belt. Therefore, these belts have less stretch on your drive, don't require take-up so often. And the engineered straight sidewalls grip pulleys snugly and deliver positive power. All the advantages are described in Bulletin 6868 D, mailed on request. You'll find our hose, flat belting and conveyor belts last longer, too. Phone Your R/M Distributor.

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Now... as many as 6 Beams or Yarn Carriers

Can be Dyed at the Same Time in the Same Dye Bath!

Uniform dyeing of yarn on beams or in packages can be attained only when each and every beam or package carrier of yarn is dyed simultaneously under identical conditions. And identical conditions can be assured only in the same dye bath. The SMITH-DRUM Combination Beam and Package Dyeing Machine was the first to make this possible and practical... by providing two-kier and three-kier machines... designed so that up to the full capacity of the machine, all the beams or yarn carriers are subjected to the same dye bath and the same dyeing conditions of pressure and temperature, all at the same time. Then, a few years later, the same principle was employed in a four-kier machine.

Now... a *six-kier* machine is available, which permits dyeing not only two, three or four but up to *six* beams or yarn carriers at *one time*... in the *same* dye bath... with the *same* liquor ratio... under the *same* operating conditions of flow, pressure and temperature... and with uniform distribution of additions to the dye bath. Arrange for one of our representatives to discuss these important features with you... a letter, 'phone call or wire will receive our prompt attention.

Write for Catalog No. PBD-801 TODAY!

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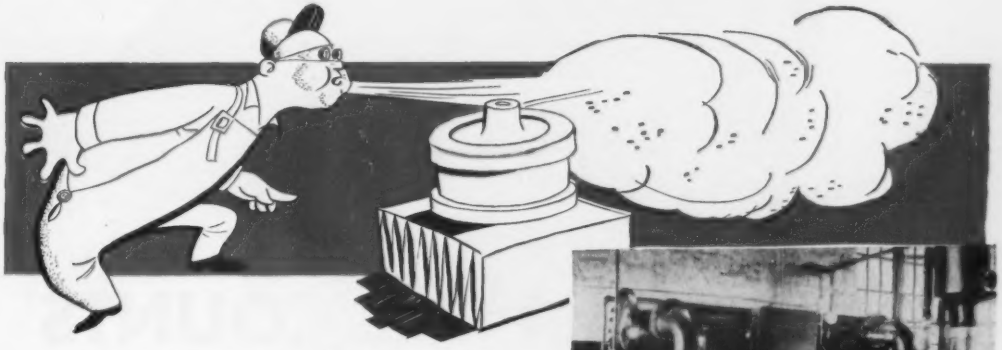
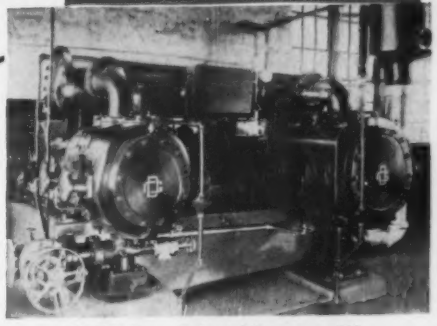
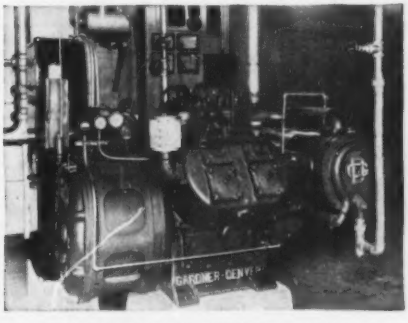


An ample supply of compressed air arms you with many opportunities to speed production—conserve man-hours—hold costs in line. Especially when it's the lower-cost-per-cubic-foot air from a Gardner-Denver Compressor.

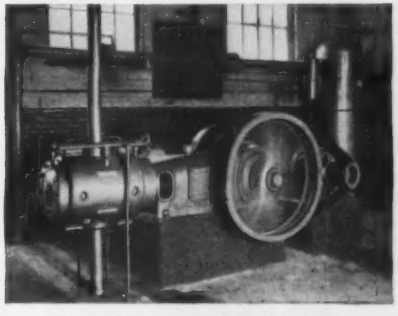
Backed by more than 90 years of quality manufacturing, Gardner-Denver Compressors handle constant peak loads—dependably . . . keep maintenance and operating costs so low you can use compressed air throughout your plant—without skimping. Write us today for complete information.



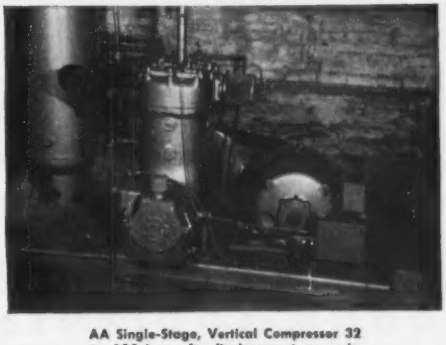
HA Two-Stage, Horizontal Compressor 593 to 1854 cu. ft. displacement per min.



WB Two-Stage, Vertical Compressor 142 to 686 cu. ft. displacement per min.



RX Single-Stage, Horizontal Compressor 89 to 1292 cu. ft. displacement per min.



AA Single-Stage, Vertical Compressor 32 to 183.6 cu. ft. displacement per min.

SINCE 1859

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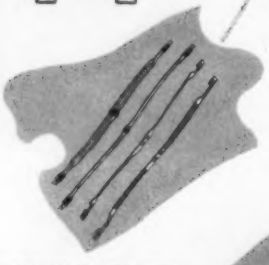
In your production picture, every part counts. None can be spared, however minor it seems by itself. We've pioneered improvements in all details of loom harness equipment year by year since 1867. And when every Emmons part does its job better, lasts longer, gives more value for your investment — your whole operation moves into the profit column that much sooner!



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Emmons cut-out and slotted drawing-in heddles for use with Barber - Coleman drawing-in machines. Standard heddles — stainless, cadmium or nickel finish.

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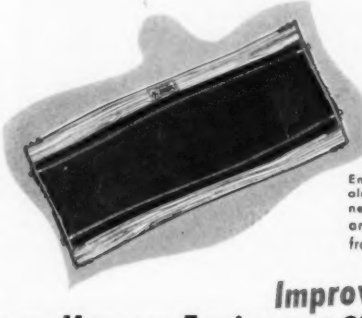
Emmons RigidReed: Light, resilient, strong, compact — and long-lasting. Also standard pitchband and all-metal reeds in carbon and stainless steel.



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Emmons wooden, aluminum and magnesium Standard and Drawing-In frames — all types.

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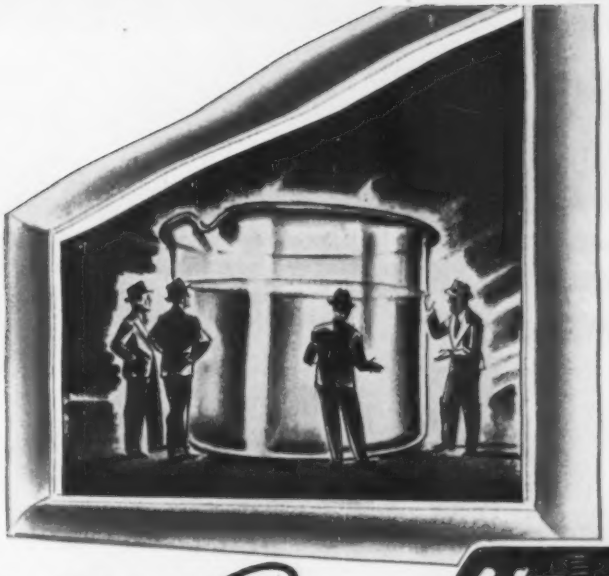

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BUY THEM BY THE *Gallon!*

What is the *active* life of your bronze valves? On any given application, *how much fluid* will they efficiently control — in gallons of liquid, cubic feet of air, pounds of steam? How long will they last — *in action?*

Make your own comparison — by calling the maintenance or engineering department of your plant. Whether your valves stand idle much of the time — or are in constant use — you'll find that Lunkenheimer bronze valves handle *more* fluids with less maintenance than any other kind. And there are good reasons why . . .

• Exclusive Stemalloy* stems eliminate stem-thread failures. They have actually been tested at more than 300,000 openings and closings — with live steam flowing through the lines. • Body sections are ruggedly proportioned for maximum strength and long life. Wide clearance at thread ends keeps the pipe from jamming against the diaphragm, holds maintenance costs down. • Repacking seats let you repack under pressure — with the valve wide open. • Wrenching surfaces are wide and sturdily built. Danger of twisted body sections and consequent leakage is avoided. Downtime is minimized. • The packing gland, with its thick hexagon lip, can be lifted out with a gentle twist of the wrench. There's no more prying or digging that might cause permanent damage.

Ask your distributor about the other dollar-stretching features of Lunkenheimer 125-lb. globe valves. *And write for Circular 582, describing the line in detail.* Address: The Lunkenheimer Co., Box 360R, Cincinnati 14, Ohio.

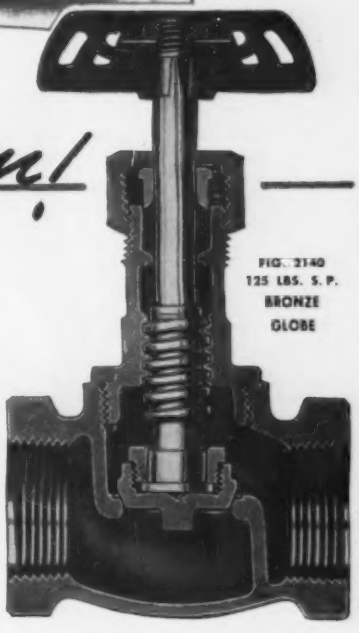

FIG. 2140
125 LBS. S. P.
BRONZE
GLOBE

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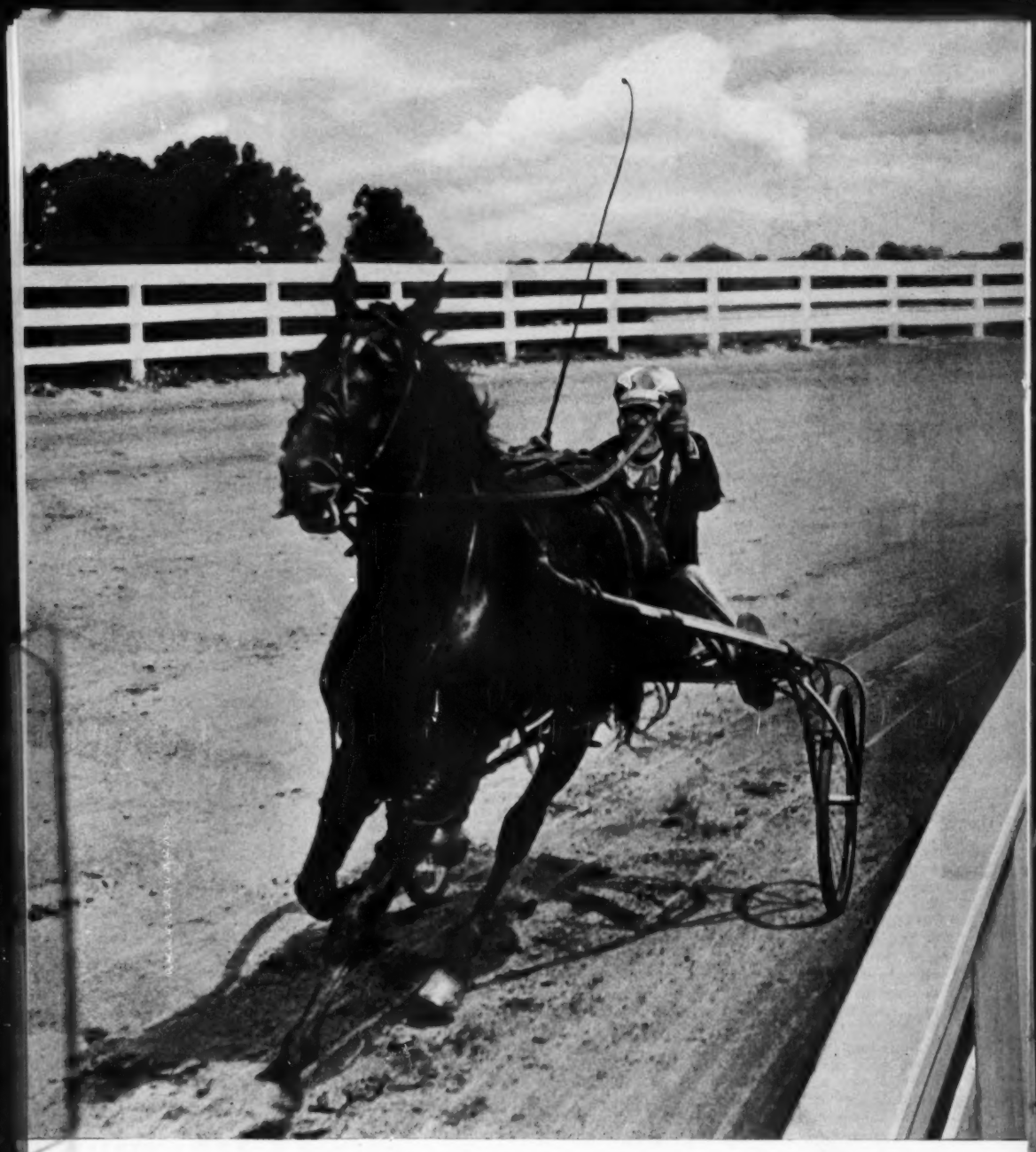
*Patented Alloy

LUNKENHEIMER

THE ONE *Great* NAME IN VALVES

L-451-6



He's a great pacer—

BUT how does he compare with Billy Direct? . . . In everything we do, we make comparisons . . . In Full-Fashioned Knitting, the one standard for comparison is the 30-section "Reading" Machine with a production of 14 to 16 dozen pairs of superior quality stockings in 8 hours. 51-gauge, 60-gauge.

TEXTILE MACHINE WORKS • READING, PENNA.

Billy Direct set the world's pacing record for one mile — 1.55 — at Lexington, Ky., on September 28, 1938.

Production of NEWER SYNTHETICS Follows Course of Rayon

▶ **Non-cellulosic-fiber production in eight years reaches same point as rayon in 11 years.**

▶ **Rayon and acetate production continues to grow as new uses found, fibers made more versatile.**

▶ **Listed for the first time: polyester and staple-acrylic properties; comparative natural-fiber properties, foreign producers.**

By WILLIAM A. NEWELL, Managing Editor, TEXTILE WORLD

THE GROWTH IN PRODUCTION of non-cellulosic synthetic fibers at the same rate as (or slightly better than) rayon in its early days is the dominant factor in the synthetic-fiber picture today. Other important factors are expanded production and uses of the older synthetics and improvements in yarns and fibers.

Estimated production of non-cellulosic fibers in 1951 is 165,000,000 lb., an increase of 20,000,00 lb. over 1950. Thus the non-cellulosic fibers have reached the point productionwise in about eight years that rayon reached in 11 years after its production started in 1922.

However, rayon and acetate continue to dominate synthetics production and use. Estimated 1951 production of viscose- and cuprammonium-rayon filament and staple is about 950,000,000 lb., up about 135,000,000 lb. over 1950. Acetate production in 1951 is estimated at 540,000,000 lb., up 97,000,000 lb. from 1950. Highest estimate of total production of fibers of all types in 1954 is 2,000,000,000 lb., of which about 1,600,000,000 will be rayon and acetate.

RAYONS. Viscose and cupra rayon manufacturers are continuing expansion of production facilities and improvement of existing yarns both for present and potential uses.

The vastly increased use of rayon in carpets and potentialities in men's and women's year-'round suitings have accounted for much rayon-production expansion. Bigelow-Sanford Carpet Co. stated early this year that 27% of its total fiber consumption in 1951 would be rayon. Purchase of Hartford Rayon Corp. by Bigelow-Sanford and purchase of Delaware Rayon Co. and New Bedford Rayon Co. by Mohawk Carpet Co. indicate the furtherance of this trend.

Improved rayons and fiber types designed to balance the line of fibers available have been prominent developments. Fiber E, a rayon with "built-in" crimping properties, has been recently reintroduced. The yarn can be crimped in finishing by a brief soaking in dilute caustic soda. An 8-den. crimped rayon staple that produces a fabric with a springy hand has been developed by American Viscose Corp. This fiber fills in the gap in the rayon-staple line between 5½-den. apparel staple and 15-den. carpet staple.

American Bemberg Co. has announced that production of its cupra rayon in staple form will be started soon. However, this development is still in the experimental stage, and no properties or fibers are listed. Part of the company's continuous filament yarn is now manufactured continuously and has a residual shrinkage of 4%.

ACETATE. This well-known fiber is listed in this revision of the chart, for the first time, under its proper name—acetate—and no longer as acetate rayon. (TEXTILE WORLD has long recognized the desirability of keeping the former three types of rayon as distinct from each other as possible, and has so testified before the FTC.)

Acetate, too, looks forward to increased use in carpets and suitings, and production is being expanded in line with these potential markets.

Plas-Teca, a plasticized acetate fiber developed by Tennessee Eastman Co., is one example of modification of existing fibers of this type.

While technically neither viscose rayon nor acetate, Celcos, a staple that combines the best characteristics of both viscose rayon and acetate, is being produced by Celanese Corp. of America. Because of rapid changes being made in the properties of Celcos, information for this chart, except for deniers and lengths available, could not be obtained.

NYLON. The listing of nylon properties in this revision of the chart reflects improvements in tensile strength, elongation, stiffness, and toughness.

A significant development is the licensing by Du Pont of Chemstrand Corp. to produce nylon. A plant for producing 50,000,000 lb. of nylon yarn annually is being built near Pensacola, Fla.

VINYLIDENE CHLORIDE. Major development in saran fiber is the formation of Saran Yarns Co., a jointly owned subsidiary of Dow Chemical Co. and National Plastic Products Co., to produce saran staple. The fiber is described as a fine-denier saran curled staple fiber. Major end uses will be in carpets, blended with wool, or in 100% form. The curled feature of the fiber provides bulk and coverage. Production is limited now, but will be substantially increased in early 1952.

POLYETHYLENE. Improvements in elongation and melting point are listed in this revision for polyethylene. The raw material for polyethylene, produced by both Bakelite and Du Pont, is in extremely short supply and is under strict allocation by both producers. During this period of shortage most of the production of the polyethylene monofilament is used in the weaving of a fabric for banner-type tow targets for the Armed Services. Reeves Brothers reports that the sale of the monofilament or monofilament fabrics temporarily can be made only against orders carrying a defense-order rating.

Reeves Brothers also reports continued development work and that a heat-stabilization process has been perfected to a point that affords substantial improvements in various characteristics of polyethylene for its use as a woven textile.

VINYL RESINS. Vinyon is now available only in staple form (HH) from American Viscose Corp. Vinyon N filament, of course, is still being produced by Carbide & Carbon Chemicals Corps.

GLASS. A new producer of glass yarns, Libby-Owens-Ford Glass Co., is scheduled to begin operations in Parkersburg, W. Va., about October, 1951. The plant will produce fine fibers for insulation and textile-type yarns. Yarns to be produced are included in the *Table of Commercial Yarns and Fibers* in this revision of the chart.

Glass Fibers Inc. has expanded its plants and has moved its offices to Toledo, Ohio. New developments by this company are Vitron 300 glass yarn—a low-twist, medium-filament yarn for magnet-wire manufacturers—and low-twist construction in all standard yarns produced.

AZLON. Vicara, the only azlon-type fiber produced in the U. S., has passed from the advanced-development stage to acceptance by the textile industry. Production is at full capacity, production facilities have been more than doubled in the past year, and further expansion is now under way.

Vicara blended with other fibers has wide-spread acceptance in knitting. Many woven fabrics have been introduced for women's and men's suitings, sport clothes, and dress goods; and Vicara has been used in substantial tonnage in the upholstery industry. There is some acceptance of 100% Vicara fabrics for special industrial usage. Blended with dynel it has been adopted by the Air Force in a pile fabric (2/3 Vicara and 1/3 dynel).

NEW FIBERS. New fibers listed in either the physical-properties table of the chart or the *Table of Commercial Yarns and Fibers* (or in both) are Dacron polyester fiber and Orlon acrylic staple fiber, both made by E. I. Du Pont de Nemours & Co.; Acrilan acrylic staple fiber made by Chemstrand Corp.; X-51 (temporary name) acrylic continuous-filament yarn, staple, and tow made in pilot-plant quantities by American Cyanamid Co.; dynel acrylic-vinyl staple made by Carbide & Carbon Chemicals Corp.; saran staple fiber made by Saran Yarns Co.; Plas-Teca, a plasticized acetate staple made by Tennessee Eastman Corp.

A new producer of polyethylene is Firestone Plastics Co. Production of polyethylene and continuous-filament vinyon has been discontinued by American Viscose Corp.

Most important of the new fibers in their impact on the industry are the several acrylics and the polyester. Three major companies—Du Pont, Chemstrand, and American Cyanamid—are now developing acrylic-fiber-production facilities. Volume production of staple should start in 1952, with the completion of Du Pont's Camden, S. C., plant. Chemstrand's Decatur, Ala., plant is scheduled to get into production sometime later, with a capacity of 30,000,000 lb. of Acrilan annually. While American Cyanamid has not, as this chart goes to press, decided on full-scale commercial production, a pilot-plant is in operation (as of July, 1951) producing acrylic fiber temporarily known as X-51. Union Carbide & Carbon Co. is producing dynel in a 5,000,000-lb.-capacity plant in S. Charleston, W. Va.

Dacron, Du Pont's polyester fiber, will be produced in a plant being built at Kinston, N. C., with a capacity of 35,000,000 lb. annually, and scheduled to start production in early 1953.

The acrylics and polyesters clearly constitute the major threat to wool fiber. The possibilities of substitution have been recognized by defense-production authorities. Many woolen and worsted mills are anticipating use of these newer synthetics by starting fabric lines and by further experimentation with the fibers in the limited quantities available.

NEW PRODUCERS. Two new companies are now listed among U. S. producers of viscose rayon yarns. Those added are: Beaunit Mills, Coosa Pines Div., and Eastern Rayon Corp.

A new tire-cord plant to be built in West Virginia is being planned by Eastern Rayon Mills. Courtaulds, Ltd., of England, has also announced plans to build a rayon-producing plant in the U. S., probably in Alabama.

Companies with changed addresses are Glass Fibers, Inc., New Bedford Rayon Co., and Skenendoa Rayon Corp. Companies no longer producing synthetics and that have been dropped from the list are National Rayon Corp. and The Sunlite Mfg. Co. Companies previously mentioned as producers of new noncellulosic synthetics have also been added.

FOREIGN PRODUCERS LISTED. Because of the interest in rayon and other synthetic fibers produced in foreign countries, this chart, for the first time, contains a list of foreign producers. Both rayon and other fibers are included. Names and addresses of producers, types of fiber produced, and U. S. representatives are listed as accurately as possible.

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NATURAL-FIBER PROPERTIES. For the first time, this 1951 revision of the chart contains columns listing physical and chemical properties of cotton and wool. These properties have been added because of requests for them from many users of past issues of the chart who desired to compare natural- and synthetic-fiber properties.

FIBERS TO COME. The end of the parade of new synthetic fibers is not yet in sight. About 25 U. S. companies, including some present producers of fiber, are known to be experimenting with new fibers or modifications of existing ones. Although thousands of fiber-forming materials exist, few produce potentially successful textile fibers; hence most companies experimenting with new fibers are cautious about revealing results or the direction of their efforts. Celanese Corp. is known to be working on a new fiber known experimentally as Fiber 32 and reported to be a caprolactam polymer. Tennessee Eastman Corp. and Industrial Rayon Corp. are working with acrylic fibers. Several new German fibers are said to have been developed but are not being put into commercial production because of the precarious position of that country. Best bets for development as fibers in the near future are caprolactam and polyurethane.

How To Use X-Ray-Diffraction Diagrams

The use of X-ray diffraction diagrams to study textile fibers is relatively new. A series of these diagrams has been included in the fiber chart since they give much information on the properties of textile fibers irrespective of external shape, texture, or other characteristics.

The diagrams vary from one another in the number, diameter, relative intensity, and width or diffuseness of the diffraction rings; the concentration of the rings into arcs; and the general or background scattering.

These different diagrams arise from the nature of the "crystalline" and "amorphous" areas that comprise the fiber and their orientation in respect to the fiber dimensions. Any X-ray fiber diagram which consists of a series of definite diffractions rings (such as those of Fortisan, Orlon, viscose rayon, or polyethylene) indicate that the fiber contains relatively large amounts of crystalline materials. Similarly, a fiber diagram consisting of one or two broad halos (such as those of azlon, Fiberglas, or cellulose acetate) indicates relatively large amounts of non-crystalline or "amorphous" substance. However, among crystalline fibers of a given chemical composition, e.g. cellulose, wide variations in the total amount of crystalline material present may occur.

In general, the number of visible diffraction rings increases and the width of these rings decreases with increasing amounts of crystalline material. These trends are apparent in the diagrams shown of Fortisan, a highly crystalline cellulose fiber, and high-tenacity rayon, a cellulose fiber of lower crystallinity. In a similar fashion, the X-ray diagrams show that Orlon contains more crystalline material than Vinyon.

The crystallized regions of fibers are usually aligned with their long axis parallel or at a small angle to the fiber axis. If most of the crystalline regions are aligned roughly parallel to the fiber axis, the diffraction rings will be concentrated in very short arcs, such as those in the diagrams of high-tenacity rayon and polyethylene. If only a few of these regions are parallel to the fiber axis, the arcs in the X-ray diagram will be longer and approach complete circles, as in the diagram of low-tenacity rayon. Actually, the principal difference between low-, medium-, and high-tenacity rayons lies in differences in this degree of parallel orientation.

The differences in crystallinity and orientation illustrated by the X-ray diagrams are reflected in the fiber properties and, accordingly, can be used to predict properties. For example, highly crystalline fibers with good parallel crystallite orientation will have high tenacity and low elongation. Less crystalline fibers with lower degree of parallel orientation will be less strong but more extensible. Therefore, by varying crystallinity, orientation, and chemical composition, a wide variety of fibers of different properties can be made for definite end uses.

HOW TO CONTACT FIBER PRODUCERS

Below are addresses at which the various yarn producers can be contacted:

American Bemberg Corp.
261 Fifth Ave., New York 16, N. Y.

American Cyanamid Co.
30 Rockefeller Plaza, New York, N. Y.

American Viscose Corp.
350 Fifth Ave., New York 1, N. Y.

Beaunit Mills, Inc., Coosa Pines Div.
261 Fifth Ave., New York 16, N. Y.

Carbide & Carbon Chemicals Co.
Div. of Union Carbide & Carbon Corp.
30 E. 42nd St., New York 17, N. Y.

Celanese Corp. of America
180 Madison Ave., New York 16, N. Y.

Chemstrand Corp.
1617 Pennsylvania Blvd.,
Philadelphia, Pa.

Delaware Rayon Co.
New Castle, Del.

Eastern Rayon Mills, Inc.
1294 W. 70th St., Cleveland 2, Ohio

E. I. Du Pont de Nemours & Co.
Wilmington, Del.

Firestone Plastics Co.
350 Fifth Ave., New York 1, N. Y.

Glass Fibers, Inc.
1810 Madison Ave., Toledo, Ohio

Hartford Rayon Corp.
Rocky Hill, Conn.

Industrial Rayon Corp.
500 Fifth Ave., New York, N. Y.

Libby-Owens-Ford Glass Co.
Toledo, Ohio

Lus-Trus Extruded Plastics, Inc.
200 Hill St., Ann Arbor, Mich.

The National Plastic Products Co.
Odenton, Md.

New Bedford Rayon Co.
194 Riverside Ave., New Bedford, Mass.

North American Rayon Corp.
261 Fifth Ave., New York 16, N. Y.

Owens-Corning Fiberglas Corp.
Textile Products Div.
16 E. 56th St., New York 22, N. Y.

Reeves Bros., Inc.
54 Worth St., New York 13, N. Y.

Saran Yarns Co.
Odenton, Md.

Skenendoa Rayon Corp.
261 Fifth Ave., New York 16, N. Y.

Tennessee Eastman Co.
A. M. Tenney Associates, Inc.
10 E. 40th St., New York 16, N. Y.

Virginia-Carolina Chemical Corp.
Fiber Div., Richmond, Va.

1951 Table of Commercial S

MANUFACTURER	CONTINUOUS FILAMENT			
	UP TO 75 DEN.	100 TO 125 DEN.	150 TO 200 DEN.	210 TO 600 DEN.
American Enka Corp.	50/18, 75/18, 75/30 75/45	100/40, 100/60 125/40	150/40, 150/90	250/60, 300/60
American Viscose Corp.	50/20, 75/30 75/45	100/40, 100/60	150/40, 150/60 150/90	250/120, 300/44 300/60, 300/120 300/234, 450/100
Beaunit Mills, Inc. Coosa Pines Div.		100/40	150/40	300/75*m*
Celanese Corp. of Amer. (Rayon Div.)		100/60	150/40, 150/90	
Delaware Rayon Co.		100/24, 100/44 100/60	150/24, 150/44 150/60, 150/90 200/30, 200/60 200/90	250/120*bo* 275/120*bo* 300/44, 300/60 300/120*bo*
E. I. du Pont de Nemours & Co., Inc.	50/20*m*, 75/30	100/40, 100/60 125/50	150/40 150/90	300/50, 300/120*m* 450/72
Eastern Rayon Mills			150/50	
Hartford Rayon Corp.				300/44 450/66
Industrial Rayon Corp.		100/40	150/40*m*	250/60 300/80, 450/60
New Bedford Rayon Co.			150/40	
North American Rayon Corp.	75/30	100/60 125/52	150/42	300/75*m*
Skenandoa Rayon Corp.			150/90	300/75
American Bemberg Corp.	40/30, 50/36 65/45, 75/54, 75/60	100/60, 100/74	150/90, 150/120	
American Viscose Corp.	45/14, 55/14 75/20	100/28, 120/32 120/36	150/41, 200/60	300/80
Celanese Corp. of Amer.	30/40*s*, 40/60*s* 45/13, 55/15, 60/80*s* 75/20, 75/30	90/120, 100/26 100/40, 120/40	150/40, 150/180*s* 200/52	270/360*s*, 300/80 300/360*s*, 450/120
E. I. du Pont de Nemours & Co., Inc.	55/18, 75/24 75/50	100/32, 100/40 100/66, 120/40	150/40	200/64, 300/80 450/120
Tennessee Eastman Co.	45/11, 55/13 55/36, 75/19 75/49	100/25 120/30	150/38 200/68	300/75, 450/114
E. I. du Pont de Nemours & Co., Inc.	15/1 20/7, 20/20, 30/10 40/13 50/17, 70/34	100/34	200/34	210/34, 260/17
American Cyanamid Co.	75/45		150/90	
E. I. du Pont de Nemours & Co., Inc.	75/30	100/40	200/80	400/160
Carbide & Carbon Chemicals Co.		100/60	140/120 200/200 (*Stretched only*)	250/240, 270/240 500/200

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Synthetic Yarns and Fibers

DEN.	600 DEN. UP	TRADE-NAMES
0	1100/480*bo* 1650/720*bo*	
14 20 00	600/100, 1100/490*bo* 1150/490*m*, 1500/150 1650/980, 1900/980 2200/980	Avisco Semi-Dull, Avisco Dull, Avisco Med.-Strength (*mo*) Avisco Tire Yarn
0	600/16, 1200/33	Delray, Delragal, Delvisca
20*m*	600/96, 900/50 900/144 1100/480*bo* 1650/720*bo* 2200/960*bo* 4400/2934*bo*	Du Pont Rayon Cordura (*bo*) (Lusters produced: bright, dull)
	600/88 900/66	Hartforyon
0	1100/480*bo* 1650/720*bo*	Dul-tone, Spunlo, Premier, Tyron (*bo*)
		Newdull, Newbray
	1100/480*bo* 1650/720*bo*	Narco, Hi-Narco (*mo*), Super Narco (*bo*), Xtra-Dul
		Skenandoa Rayon, Veri Dul
		Bemberg, Matesa
		Avisco Acetate
/80 /120	600/160	Celanese, Fortisan (*t*)
80		Acele
14	900/230	Koda
17	840/140	Nylon (generic)
		X-51 (temporary designation)
		Orlon
/240		Vinyon N

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MANUFACTURER	DENIERS AND LENGTHS (*Deniers given first in units and decimals followed by lengths in inches and fractions.*)
American Viscose Corp.	Avisco Bright Regular: 1.5-1⅛, 1.5-1 9/16, 1.5-2, 3-1 9/16, 5.5-1½ to 2¼, 5.5-3½ to 6, 5.5-5 to 7. Avisco Bright Crimped: 1.5-1 9/16, 3-1½ to 2¼, 5.5-1 9/16, 5.5-2, 5.5-1½ to 2¼. Avisco Dull Regular: 1.5-1 9/16, 1.5-2, 3-1 9/16, 3-2, 3-2½, 5.5-2. Avisco Dull Crimped: 1.25-2¼, 1.5-1 9/16, 3-1 9/16, 3-2, 5.5-3½ to 6. Avisco Extra-Strength Bright: 1-1 9/16.
E. I. du Pont de Nemours & Co., Inc.	Bright: 1.5-1½, 3-1½, 5.5-2. Dull: 1.5-1½, 3-1½, 3-2, 3-2½, 5.5-2.
Celanese Corp. of Amer.	Celanese acetate staple: 2, 3, 3.5, 8, 12 and 17 den. bright and dull. All lengths.
Tennessee Eastman Co.	Teca Bright, Dull: 2, 3, 5, 8, 12, 16, and 20 den. cut to length for spinning system to be used. Plas-Teca, Bright: 3 den., 1¼ in.
Celanese Corp. of Amer.	Celanese Celcos: standard deniers and lengths.
E. I. du Pont de Nemours & Co., Inc.	Bright: 6 den. Semi-dull: 1.5, 3 den. Cut to length for spinning system.
E. I. du Pont de Nemours & Co., Inc.	Dacron, semi-dull: 3 den., 1½ and 2½ in.
American Cyanamid Co.	X-51, semi-dull: 1½ and 3 den., cut to length for spinning system.
Carbide & Carbon Chemicals Co.	Dynel, semi-dull: 2, 3, 6, 12, and 24 den. in any length from 1½ to 6 in.
Chemstrand Corp.	Acrilan: all commercial deniers and lengths.
E. I. du Pont de Nemours & Co., Inc.	Orlon: 1½, 3, and 6 den., 1½, 2, 2½, and 4½ in.
American Viscose Corp.	Vinyon HH: 3.0 den., ½ to 4. 5.5 den., ½ to 4.

MAN-MADE FIBERS in '50
Show Greatest Percent Gain

▶ The spirited "percentage" race for the greatest gain in consumer use and favor in 1950 went to rayon and other synthetic fibers. In over-all U. S. fiber consumption, rayon edged up from 18 to 20% of the nationwide total during the year. Other newer man-made fibers made significant gains as production capacities increased. Cotton in 1950 accounted for 68% of the fiber consumed, wool 9%, and silk 1/10 of 1%.

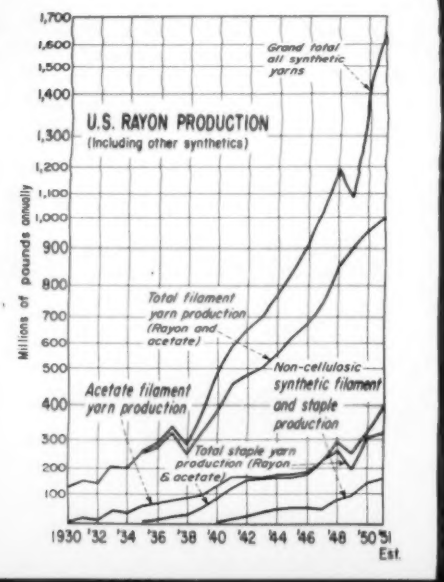
By **RICHARD C. SCOTT**, New York Editor, TEXTILE WORLD

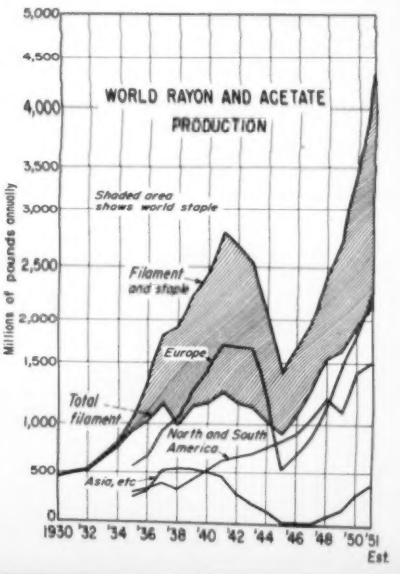
▶ The following charts have been drawn up for the convenience of TEXTILE WORLD readers who wish to survey the U. S. and world-wide fiber-production and consumption picture. Emphasis is necessarily on the man-made fibers for background purposes in this biennial Synthetic Fiber-Chart section.

▶ The charts have been arranged to give at a glance (1) the U. S. man-made fiber-production picture since before the war, (2) the world production picture, (3) the U. S. fiber-consumption picture, (4) annual average yarn and raw-material prices, (5) rayon exports and imports, and (6) U. S. hosiery-production data.

▶ Outstanding developments in textile fibers in 1950 were (1) the upsurge in last-half demand that resulted from the military invasion of South Korea, (2) the record sky-high price of wool on world markets that resulted from both the military and high civilian demand, (3) the melting away of the cotton-crop carryover from previous years, (4) the rehabilitation of war-ravaged textile plants and the increased production of rayon yarns and fiber in many countries outside the U. S., (5) and the accompanying increased demand, a result of the world-wide population increase, that is annually broadening the base upon which our textile industry stands.

▶ Our acknowledgment goes to *Rayon Organon* for the use of many of the neatly arranged official U. S. Dept. of Commerce figures on textile fibers that first appeared in its pages. Other sources are *Survey of Current Business, Facts for Industry*, the 1950 National Industrial Conference Board *Economic Almanac*, and the National Assn. of Hosiery Mfrs. *Hosiery News Letter*.





Production of Items Made from Rayon and Acetate
In first quarter of years 1944 to 1950

Broad-Woven Goods (millions of linear yards)	(Class)	1944 (1st qtr)	1945 (1st qtr)	1946 (1st qtr)	1947 (1st qtr)	1948 (1st qtr)	1949 (1st qtr)	1950 (1st qtr)
100% filament-rayon and acetate fabrics		294.5	275.9	269.0	287.7	344.0	336.6	386.8
Bright viscose taffetas	(2201)	12.7	9.6	15.0	11.2	14.1	8.2	13.9
Pigment viscose taffetas	(2211)	22.5	21.6	22.4	20.2	34.5	35.2	38.1
Acetate taffetas	(2221)	23.3	21.4	21.5	18.3	22.8	36.4	46.9
Cross-dyed taffetas	(2231)	5.3	5.1	6.8	4.1	2.9	3.4	2.1
Twills and serges	(2261)	34.9	29.2	29.0	38.6	44.7	43.2	47.6
Satins	(2271, 2281)	38.5	40.8	39.0	45.6	42.5	46.8	48.1
Flat and Canton crepes and failles	(2312)	22.1	19.2	22.1	23.1	34.3	37.6	48.1
French crepes	(2322)	19.6	21.7	23.2	29.1	33.0	34.3	38.3
Marquisettes	(2352)	10.6	11.1	12.1	15.2	12.7	14.8	21.0
Ninon and voiles	(2362)	9.5	9.5	11.0	11.3	8.6	6.2	7.8
All Other 100% filament-rayon and acetate fabrics		95.5	86.7	66.9	71.0	93.9	70.5	74.9
100% spun-rayon and acetate fabrics		42.6	44.0	49.9	50.9	102.4	77.6	109.9
Poplins, challis, and bedford cords	(2413, 2423)	7.6	7.6	7.0	4.7	11.3	14.7	14.3
Twills, serges, etc.	(2403)	16.0	14.7	10.3	8.0	26.5	30.3	59.8
Linen-type and flakes	(2433)	5.9	7.0	7.6	5.3	8.2	5.0	12.2
Plied-yarn fabrics	(2443)	4.8	4.9	7.1	14.6	18.4	9.6	6.9
All Other 100% spun-rayon and acetate fabrics		8.3	9.8	17.9	18.3	38.0	18.0	16.7
Filament and spun-rayon and acetate fabrics:		38.0	40.8	46.8	48.3	54.7	50.7	51.2
Faille	(2524)	11.3	14.1	17.0	16.9	12.5	9.0	7.1
Shantungs	(2514)	7.4	7.6	6.6	6.2	7.5	8.7	5.1
All Others		19.3	19.1	23.2	25.2	34.7	33.0	39.0
Mixture (51% or more rayon or acetate)		37.4	40.9	57.5	63.8	39.7	34.2	33.7
Rayon or acetate and wool	(2605)	6.3	6.6	7.6	10.3	9.1	7.3	3.9
Rayon or acetate and cotton	(2635, 2645)	23.2	22.1	36.1	40.1	26.3	21.9	21.6
Rayon or acetate and other fibers	(2655)	7.9	12.1	13.8	13.3	4.3	5.0	8.1
Pile, upholstery, drapery, and tie fabrics		7.0	8.1	10.2	11.9	12.4	9.1	9.1
Estimate to cover mills not reporting		2.9	0.5	—	—	—	—	—
TOTAL rayon and acetate broad-woven goods		422.6	416.4	433.5	462.5	553.2	505.3	590.7
Nylon, glass, and other fibers		24.0	6.0	5.4	17.8	16.8	28.3	47.9

U. S. Rayon and Acetate Production Since 1920*

	Filament Yarn: Viscose + Cupro	Filament Yarn: Acetate	Staple & Tow: Viscose	Staple & Tow: Acetate	TOTAL
1920	10.0	0.1			10.1
1922	24.0	0.1			24.1
1924	36.2	0.1			36.3
1926	60.1	2.6			62.7
1928	91.2	6.0	0.2		97.4
1930	117.5	9.8	0.4		127.7
1932	116.4	18.3	1.1		135.8
1934	170.3	38.0	2.2		210.5
1936	214.9	62.7	9.8	2.5	289.9
1938	181.5	76.1	26.4	3.5	287.5
1940	257.1	133.0	70.6	10.5	471.2
1942	310.5	168.8	127.6	25.7	632.6
1944	383.5	171.7	128.4	40.3	723.9
1946	491.2	186.3	132.7	43.7	853.9
1948	562.3	293.8	184.5	83.7	1,124.3
1949	544.3	255.0	129.8	65.3	994.4
1950	627.3	326.6	188.5	117.0	1,259.4
1951 (est)	700.0	400.0	250.0	140.0	1,490.0

millions of pounds

U. S. Rayon, Acetate, Nylon, Silk Broad Woven Goods Produced*

	100% Filament Rayon & Acetate	100% Spun Rayon & Acetate	Filament & Spun Rayon & Acetate	Rayon & Acetate mixtures & Blends*	Nylon, Silk, Etc.	TOTAL
1937	713	55	67	68	128	1,031
1939	993	176	23	144	69	1,405
1941	1,230	218	80	127	55	1,710
1943	1,090	175	144	169	79	1,657
1945	1,029	162	159	210	67	1,627
1947	1,237	332	179	262	62	2,072
1948	1,356	381	254	226	80	2,297
1949	1,297	341	184	161	145	2,128
1950	1,532	417	201	183	194	2,527

millions of linear yards
*includes velvets, upholstery, tie fabrics (51% and more rayon)

World Rayon and Acetate Production*

	Filament Yarn	Staple	Total
1935	935	138	1,074
1936	1,021	300	1,321
1937	1,197	625	1,822
1938	998	930	1,928
1939	1,149	1,091	2,240
1940	1,181	1,281	2,462
1941	1,251	1,535	2,786
1942	1,197	1,452	2,649
1943	1,152	1,392	2,544
1944	1,035	1,053	2,088
1945	901	504	1,405
1946	1,112	579	1,691
1947	1,308	670	1,978
1948	1,551	903	2,454
1949	1,637	1,063	2,700
1950	1,929	1,564	3,494
Est. 1951	2,200	2,100	4,300

millions of pounds

Breakdown of World Filament-Rayon and Acetate Production*

	U.S.A.	Other Americas	Europe	African, Asian, (excl. USSR & China)
1939	328	34	548	239
1940	390	41	534	216
1941	451	45	586	168
1942	479	47	576	93
1943	501	44	556	50
1944	555	53	404	23
1945	623	58	215	6
1946	677	62	364	9
1947	746	70	475	17
1948	856	80	578	36
1949	799	107	662	69
1950	953	133	735	108
Est. 1951	1,000	175	900	125

millions of pounds

Breakdown of World Staple-Rayon and Acetate Production*

	U.S.A.	Other Americas	Europe	African, Asian, (excl. USSR & China)
1939	51	1	737	301
1940	81	2	913	285
1941	122	2	1,115	296
1942	153	2	1,123	174
1943	162	2	1,107	121
1944	168	3	799	83
1945	168	3	312	21
1946	176	3	380	20
1947	228	5	418	19
1948	268	7	594	33
1949	195	19	790	59
1950	303	33	1,073	133
Est. 1951	325	175	1,600	200

millions of pounds

U. S. Fiber Consumption*

	Cotton	Wool	Rayon and Acetate	Other Synthetic	Silk
1930	2,610.9	263.2	118.8	—	75.7
1935	2,734.7	417.5	259.1	—	62.3
1939	3,629.7	396.5	458.8	—	47.3
1940	3,953.6	407.9	482.0	5.0	35.8
1941	5,187.3	648.0	591.8	13.0	23.4
1942	5,636.7	616.2	620.8	26.0	5.0
1943	5,269.0	636.2	656.1	39.0	1.4
1944	4,792.4	622.8	704.8	49.0	0.6
1945	4,511.3	645.1	769.9	52.0	0.5
1946	4,803.3	748.1	875.5	56.0	6.5
1947	4,668.1	708.3	987.9	50.0	2.0
1948	4,461.2	704.5	1,149.6	75.0	7.4
1949	3,838.2	511.0	992.1	92.0	4.4
1950	4,719.8	636.5	1,351.4	145.0	8.4

* millions of pounds

U. S. Per-Capita Fiber Consumption*

	Cotton	Wool	Rayon and Acetate	Other Synthetics	Silk
1939	28	3.0	3.5	—	0.35
1940	30	3.1	3.7	0.04	0.27
1941	39	4.9	4.4	0.1	0.18
1942	42	4.6	4.6	0.2	0.04
1943	39	4.7	4.8	0.3	0.01
1944	35	4.5	5.1	0.4	—
1945	32	4.6	5.5	0.4	—
1946	34	5.3	6.2	0.4	0.05
1947	32	4.9	6.9	0.3	0.01
1948	30	4.8	7.9	0.5	0.05
1949	26	3.4	6.6	0.6	0.03
1950	31	4.2	9.0	1.0	0.06

* pounds per person

Monthly Average U. S. Fiber Consumption*

	Rayon and Acetate	Wool	Cotton
1939	34.3	33.0	302.5
1945	64.0	53.8	375.9
1946	70.1	62.4	400.3
1947	79.3	59.1	389.0
1948	91.7	58.7	371.8
1949	81.4	42.6	319.9
c 1950	104.5	53.0	393.3
1951 (est.)	108.0	30.0	450.0

* millions of pounds

Percents of Total U. S. Fiber Consumption

	Cotton	Wool	Rayon and Acetate	Other Synthetics	Silk
1920	89%	10%	0.3%		0.9%
1930	85	9	3+		2.3
1939	80	9	10		1
1940	81	8	10	0.1	0.7
1941	80+	10	9	0.2	0.4
1942	81+	9	9	0.4	0.1
1943	80	9+	10	0.6	
1944	78	10	11+	0.8	
1945	75	11	13	1.0	
1946	74	12	13	0.9	0.1
1947	73	11	15+	0.8	
1948	69+	11	18	1.2	0.1
1949	71	9	18+	1.7	0.1
1950	68+	9	20	2.2	0.1

Yarn Prices* Annual Average

	Rayon		Cotton, combed	Worsted, Bradford
	150-den. viscose filament	Spun 30/1	30/1	2/32
1939	52.0	—	32.3	—
1945	55.0	—	57.8	—
1946	55.9	—	68.8	—
1947	66.9	88.2	88.5	259.4
1948	75.2	89.8	95.3	323.2
1949	73.0	71.7	78.1	325.6
1950	73.0	68.6	93.2	332.8

* cents per pound

Raw-Material Prices* Annual Average

	1½-den., 1½-in. bright viscose staple — average	Cotton — 10-Mkt. Average	Fine combing territory-grade Wool — (Scoured Basis)
1945	25.0	22.6	117.7
1946	25.4	38.6	102.6
1947	31.9	34.4	121.6
1948	36.4	33.8	158.5
1949	36.0	31.6	167.0
1950	36.0	36.2	198.0

* cents per pound

Rayon and Acetate Exports*

	Filament Yarn[a]	Staple & Waste[b]	Spun Yarn[c]
1939	1.69	1.40	
1940	1.37	2.28	
1941	3.24	3.39	
1942	5.45	1.42	
1943	9.25	3.02	0.61
1944	16.76	2.33	1.02
1945	20.57	4.64	1.45
1946	15.26	4.39	1.77
1947	23.77	4.86	2.97
1948	14.79	7.44	0.82
1949	17.49	13.59	1.84
1950	00.00	00.00	0.00

* millions of pounds

[a] U. S. Dept. of Commerce classes 3840 and several subdivisions
[b] U. S. Dept of Commerce classes 3830 and several subdivisions
[c] U. S. Dept. of Commerce class 3840.07

U. S. Hosiery Production*

	Women's Full Fashioned	Women's Seamless	Men's Seamless	Anklets	Children's
1939	43.8	16.4	42.9	23.3	7.0
1940	41.9	15.7	40.9	22.1	6.1
1941	41.8	15.7	49.9	27.0	6.9
1942	35.1	15.2	52.4	29.6	6.1
1943	38.0	13.0	52.5	31.2	4.5
1944	36.6	9.5	48.8	30.9	5.2
1945	34.7	7.4	48.6	28.9	6.3
1946	40.3	9.8	48.7	37.1	8.2
1947	38.9	11.2	46.6	33.2	8.2
1948	44.7	8.5	42.1	30.8	8.4
1949	45.2	7.7	40.9	29.9	8.6
1950	51.6	7.4	46.4	32.6	9.5

* million-dozen pairs

Foreign Trade Rayon and Acetate Imports*

	Filament Yarn[a]	Staple[b]	Waste[c]
1935	0.03	1.45	3.91
1936	0.25	12.72	9.71
1937	0.87	20.61	13.72
1938	0.26	23.19	1.13
1939	0.17	47.40	2.07
1940	0.04	17.73	1.24
1941	0.03	11.69	1.72
1942	0.01	0.17	1.15
1943	—	—	0.84
1944	—	—	0.57
1945	—	2.44	0.53
1946	0.11	33.88	1.51
1947	0.31	36.05	0.77
1948	10.15	38.66	0.42
1949	0.34	15.59	2.20
1950	6.38	91.19	10.10

*millions of pounds

[a] U.S. Dept. of Commerce classes 3801 and 3802
[b] U.S. Dept. of Commerce classes 3810 and 3810.1 (sliver, tops, and roving included, starting 1937)
[c] U.S. Dept. of Commerce class 3805 (no sliver, tops or roving included after 1936)

U. S. Hosiery Shipments Percentagewise by Fiber

	1944	1945	1946	1947	1948	1949	1950
Women's F. F.—							
Rayon	71%	73%	20%	8%	3%	—	—
Nylon	—	4	57	79	93	98%	98%
Mixed	28	22	18	10	4	2	2
Cotton	1	1	1	1	—	—	—
Silk	—	—	4	2	—	—	—
Women's Seamless —							
Rayon	46%	49%	38%	26%	23%	18%	14%
Nylon	—	1	27	36	43	47	60
Mixed	15	10	6	5	2	3	3
Cotton	37	39	28	32	31	31	22
Wool	2	1	1	1	1	1	1
Men's Seamless —							
Rayon	25%	23%	31%	34%	38%	32%	30%
Nylon	—	—	1	2	2	3	4
Cotton	44	43	50	50	49	51	53
Wool	31	34	18	14	11	14	13

POLYESTER FIBER	
E. I. du Pont de Nemours & Co., Inc.	40/34, 70/
Owens-Corning Fiberglas Corp.	900-1/20
Glass Fibers, Inc.	
Libby-Owens-Ford Glass Co.	
Firestone Plastics Co.	Monofilam Also rattan
Lus-Trus Extruded Plastics, Inc.	Monofilam Also rattan
The National Plastic Products Co.	Monofilam
Saran Yarns Co.	Monofilam
Firestone Plastics Co.	Monofilan
The National Plastic Products Co.	Monofilan
Reeves Bros., Inc.	Monofilan

mo Medium-tenacity only. *bo* High-

	CON
Definition	An assemblage of contin by logical package size and/or plied into balanc
Filament designation	First letter: indicates glas suitable for high tempera Second letter: "C" indic Third letter: indicates fil following designations: "D" 0.00021 t "E" 0.00026 to "F" 0.00031 to "G" 0.00036 t
Strand number	The numbers 900, 450, of raw glass strands per strand. All other yarns
Yarn construction	Plies in continuous-filam following the strand nu strands twisted; the seco number of strands is pro
Yards per pound	Determined, basically, b dividing by the total nu

, 70/34			210/34		
/20	900-1/2 450-1/0	450-1/2 450-2/0 225-1/0	450-1/3, 450-2/2 450-3/0, 450-4/0 225-1/2, 225-2/0 150-1/0	450-3/2, 450-3/3 450-3/5, 450-4/3 450-4/5, 225-1/3 225-2/2, 225-3/0 225-3/2, 225-3/3 225-4/3, 150-1/2 150-1/3, 150-2/2 150-3/2, 150-3/3 150-3/4	Fiberglas
	450-1/0	450-1/2 450-2/0 300-1/0 225-1/0	450-1/3, 450-2/2 450-3/0, 450-4/0 300-1/2, 300-1/3 225-1/2, 225-2/0 150-1/0	450-3/2, 450-3/3 450-3/5, 450-4/3 450-4/5, 300-2/2 300-3/2, 225-1/3 225-2/2, 225-3/0 225-3/2, 225-3/3 225-4/3, 150-1/2 150-1/3, 150-2/2 150-3/2, 150-3/3 150-3/4	Vitron
			150-1/0	150-2/0, 150-1/2 150-3/0, 150-1/3 150-1/4, 150-2/2 150-3/2, 150-4/2 150-3/3, 150-3/4 150-4/4, 150-4/5 150-4/6, 150-4/7 150-4/8, 150-4/9 150-4/10, 150-4/11	
ofilaments in diameters of 0.005, 0.008, 0.01, 0.012, 0.015, 0.02, and larger up to 0.08 in. rattan-like strips.					Velon
ofilaments in diameters of 0.008, 0.01, 0.012, 0.015, 0.02, and larger up to 0.05 in. rattan-like strips.					Saran (generic)
ofilaments in diameters of 0.005 to 0.05 in. Also rattan-like strips. 64 standard colors.					Saran (generic)
ofilament: 70 and 124 den.					
nofilament in diameter of 0.21 in.					
nofilaments in diameter of 0.012 in. (others on request).					Wynene
nofilaments in diameter of 0.012. Also rattan-like strips.					Reevon

High-tenacity only. m Medium-tenacity and regular. h High-tenacity and regular. s Saponified.

GLASS-FIBER NOMENCLATURE

CONTINUOUS FILAMENT	STAPLE
continuous glass filaments, limited in length only size and further processing operations, twisted, balanced yarns.	An assemblage of fibers of 9-in. average length which is attenuated, twisted, and/or plied into balanced yarns.
es glass composition. Type "E" (electrical) is most mperature and electrical applications. indicates the fiber is continuous. ates filament diameter (in inches) according to the ons: 0021 to 0.00025 in. — Strand Number 900 and 450 0026 to 0.00030 in. — 300 0031 to 0.00035 in. — 225 0036 to 0.00040 in. — 150	**First letter:** indicates glass composition. Type "C" (chemical) is most suitable for acid and alkali resistance. **Second letter:** "S" indicates the fiber is staple. **Third letter:** indicates filament diameter (in inches) according to the following designations: "E" 0.00026 to 0.00030 in. "G" 0.00036 to 0.00040 in.
450, 300, 225, 150 represent 1/100 of the yardage ds per pound. (900 yarns have 102 filaments per arns have 204 filaments per strand.)	The numbers 25, 50, 75, etc., represent 1/100 of the yardage of staple yarn per pound.
s-filament glass yarns are designated by two digits nd number. First digit shows number of original e second, the number of these yarns plied. Total is product of both digits. (0 is multiplied as 1.)	Plies in spun-staple yarns are designated by a number following those indicating yards per pound. In certain constructions, as indicated by the letter "R" after the ply number, the yarn is reinforced with one end of ECD 450-1/0 or an equivalent continuous glass yarn.
ally, by multiplying the first number by 100 and tal number of strands.	Determined, basically, by multiplying the first number by 100 and dividing by the number of plies.

Owens-Corning Fiberglas Corp.	Designations are for yarns given in Fiberglas designations (in parentheses are equivalent cotton counts, but Fiberglas yarn diameters are much smaller than cotton for equivalent counts.) Type CSB: 44/2R (2.6), 25/2 (1.5), 12.5/2 (0.77), 12.5/1 (1.5), 50/2 (3.0). Type ESB: 70/2R (4.2), 40/2R (2.4), 25/2 (1.5), 31/2 (1.8).
Virginia-Carolina Chemical Corp.	Zein-type protein fiber: 2, 3, and 4 den. staple (16, 20, and 23 microns) in lengths from ½ to 6 in. as specified.
Saran Yarns Co.	Straight: 10, 22, 30, 45, 60, and 70 den. in lengths from 2 to 40 in. Curled: 22 and 30 den., in lengths from 2 to 40 in. Crimped: 10 den. in lengths from 2 to 40 in.

CONTINUOUS-FILAMENT TOW

MANUFACTURER	LUSTER, DENIERS, AND SIZES
American Viscose Corp.	Avisco Bright and Dull: 1.5 den., 190,000 total den. 1.5 den., 245,000 total den. 3.0 den., 190,000 total den. 3.0 den., 245,000 total den. 5.5 den., 190,000 total den. 5.5 den., 245,000 total den. 10.0 den., 245,000 total den. Experimental types: 1.0 den., 245,000 total den. 20.0 den., 245,000 total den.
Eastern Rayon Mills	4,000 total den. high tenacity.
Celanese Corp. of Amer.	Bright and dull Celatow: 3, 5.5, 17 den.
Tennessee Eastman Co.	Bright and dull: 3 den., 120,000 total den., 5 den., 160,000 total den. on ball warps.
E. I. du Pont de Nemours & Co., Inc.	Bright: 6 den. per filament. Semi-dull: 1.5 and 3 den. per filament.
E. I. du Pont de Nemours & Co., Inc.	Semi-dull: 3 den. per filament.
American Cyanamid Co.	No designations yet

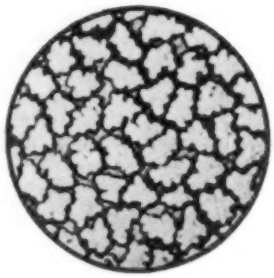
1951 REVISION

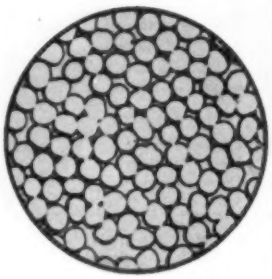
Textile World's S

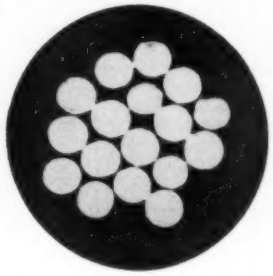
Microscopic Appearance

These cross-sections not only tell much concerning some properties of the fiber but are often useful for identifications. Not all photographs are the same magnification due to differences in filament sizes.

The viscose, acetate, cupra, and vinylidene chloride cross-sections are courtesy of the Southern Regional Research Laboratory.

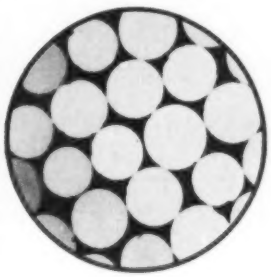
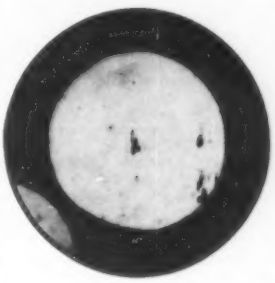
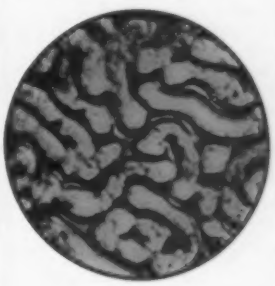






	RAYON				ACETATE			NYLON		
	VISCOSE			CUPRA (CUPRAMMONIUM)						
	Regular	Med. Tenacity	High Tenacity		Regular	Saponified	High Elongation	Regular	High Tenacity	
Tensile Strength (g.p.d.) (Std. is 70° F. at 65% r.h.) Std.	1.5 to 2.4	2.4 to 3.0	3.0 to 4.6	1.7 to 2.3	1.3 to 1.5	7.0	1.3 to 1.6	4.7 to 5.6	6.4 to 7.5	6.
Wet	0.7 to 1.2	1.2 to 1.7	1.9 to 3.0	0.95 to 1.25	0.8 to 1.2	6.0	0.86 to 0.97	4.2 to 5.0	5.7 to 6.6	5.
Std. Loop	1.0 to 1.5	1.5 to 1.8	1.8 to 2.1	1.0 to 1.5	0.9 to 1.3			4.0 to 4.8	5.2 to 6.2	1.
Std. Knot	0.7 to 1.4	1.4 to 1.7	1.7 to 2.0	0.7 to 1.4	0.9 to 1.3			4.1 to 4.9	5.3 to 6.2	2.
Elongation (%) Std.	15 to 30	12 to 20	9 to 17	10 to 17	23 to 30	6.0 to 6.5	45 to 50	25 to 28	17 to 19	3
Wet	20 to 35	17 to 30	14 to 20	17 to 33	30 to 40		60 to 70	29 to 32	20 to 22	2.
Elastic Recovery (%)	30 to 74 at 4%	97 at 2%	70 to 100 at 2%	17% to 75%	48 to 65 at 4%	100 at 20% 60 at 40%		100% at 8%	100% at 4%	1
Tensile Stress (psi.)	29,- to 46,000	46,- to 58,000	58,- to 88,500	33,000 to 44,500	22,- to 28,000	136,000	22,000	68,000 to 81,000	86,000 to 109,000	2
Average Stiffness (g.p.d.)	11.1	16.6	25.5	15.5	5.5	116.6	3.3	20	39	3
Average Toughness g.cm./d.cm.	0.19	0.21	0.22	0.14	0.17	0.21	0.35	0.56		0.
Specific Gravity	1.5 to 1.52			1.52 to 1.54	1.32	1.5	1.3	1.14	1.14	2.
Regain (Adsorption)	13% at 70° F. and 65% r.h.; 11% is commercial standard.			12.5% at 70° F. and 65 r.h.; 11% is commercial standard.	6% at 70° F. and 65% r.h.	10.5%	6%	3.8% at 70° F. and 65% r.h.		N
Water Absorbency	27 at 95%; total retention: 100 to 125%.			27% at 95%; total retention: 100 to 125%.	14% at 95% r.h.	20% at 95% r.h.	14% at 95% r.h.	6.1% at 95% r.h.		U
Effect of Heat	Loses strength above 300° F. Decomposes at 350 to 400° F.; does not melt; burns relatively rapidly.			Decomposes at about 300° F.; burns relatively rapidly.	Regular and high elongation are thermoplastic; lose strength above 200 to 220° F.; soften at 400 to 445° F.; fuse at 500° F.; sticking point 350 to 375° F.; burn relatively slowly. Saponified is more nearly like viscose rayon.			Melts at 482° F.; yellows slightly at 300° F. when held for 5 hr.		W de de al 1,
Effect of Age	Slight.			Slight.	Slight on tensile; none on color.			Virtually none.		N
Effect of Sunlight	Loses tensile strength after prolonged exposure, very little discoloration.			Loses strength on prolonged exposure.	Slight on tensile; none on color.			Loses strength on prolonged exposure. No discoloration. Bright yarn is more resistant than semi-dull.		N
Effect of Acids	Similar to cotton; hot dilute or cold			Similar to viscose; hot dilute or cold	Concentrated solutions of strong			Boiling in 5% hydrochloric acid ultimately causes disintegration; dissolves with at least partial decom-		A

SYNTHETIC-FIB

	GLASS	VINYLIDENE CHLORIDE (SARAN)	POLY-ETHYLENE	ACRYLIC FIBERS		
				PRINCIPALLY ACRYLIC		PARTLY ACRYLIC
						
		Monofilament and Staple		Cont. Filament ORLON	Staple ACRILAN	DYNEL
	6.3 to 6.9	1.4 to 2.3	1.0 to 2.5	4.4 to 5.2	3.0	3.0
	5.4 to 5.8	1.4 to 2.3	1.0 to 2.5	3.8 to 4.8	3.0	3.0
	1.0 to 1.4	0.7 to 1.5		3.3 to 3.7		
	2.0 to 4.0	0.6 to 1.5		2.7 to 3.0		
	3 to 4	15 to 25 (unoriented) 20 to 30 (oriented)	20 to 80	15 to 17	16	31
	2.5 to 3.5	20 to 30	20 to 80	15 to 17	16	31
	100%	95% (slow)	90 to 95% at 5% (slow)	97 at 2% (instant) 84 at 4% (instant)	40 at 10% 80 at 2%	97% at 2%
	204,000 to 220,000	15,000 to 45,000 (oriented)	11,000 to 30,000	65,000 to 74,000	44,000 to 66,000	50,000
	322	20	2 to 12	28	30	9.7
	0.07	0.62	0.3	0.44	0.32	0.46
	2.54	1.68 to 1.75	0.92	1.17	1.135	1.31
	None.	None.	None.	0.9% at 65% r.h.	1.7% at 58% r.h., 70° F.	0.3 to 0.4% at 78° F. 60% r.h.
	Up to 0.3% (surface).	Less than 0.1% (surface).	Less than 0.01%.	2% at 95% r.h. (78° F.)	17% after centrifuging	Close to 1% at 78° F. 95% r.h.
	Will not burn; strength begins to decrease at 600° F. and continues to decline to limiting temperature of about 1,000 to 1,500° F.; softens at 1,500° F.	Softening point 280 to 320° F.; self-extinguishing.	5% shrinkage at 165° F.; melts at 230° to 250° F.; softens at 225 to 235° F.; slow burning.	Sticking point 455° F. (Copper-block method). Retains 100% strength after 32 days in air at 257° F.		Will not support combustion. Stabilized shrinks above 275° F.
	None.	None.	Virtually none under normal conditions.	Virtually none.		Virtually none.
	None.	Darkens slightly.	Prolonged exposure decreases tensile strength.	Very resistant to degradation by ultraviolet light and atmosphere.		Darkens somewhat after prolonged exposure with some loss in tensile strength.
	Attacked by hydrofluoric and hot	Fair resistance to concentrated sulphuric acid; good resistance to	Very resistant	Good to excellent resistance to min-		Little or no effect

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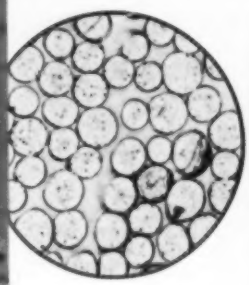
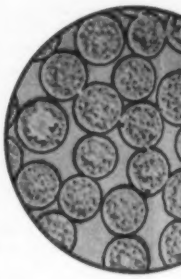
OLYESTER FIBER DACRON	VINYL RESINS		AZLO PROTEIN FIBER
	VINYON	VINYON N	
			
	Unstretched Staple (HH)	Stabilized	Zein type
to 5.0	0.7 to 1.0	2.8 to 3.5	1.1 to 1.2
to 5.0	0.7 to 1.0	2.8 to 3.5	0.53 to 0.57
to 4.4			
to 30%	100 to 120	25 to 35	30 to 35
to 30%	100 to 120	25 to 35	30 to 40
to 100% at 4% to 90% at 8%		97% at 2%	99.5% at 4% (dry) 90% at 20% (wet)
000 to 88,000	12,000 to 17,000	51,000 to 59,000	17,600 to 19,200
to 25	1.5	10.5	2.8 to 3.4
9 to 0.63	1.3	0.45	0.18 to 0.21
8	1.33 to 1.35	1.32	1.25
% at 65% r.h.	0.0 to 0.5%	0.3% at 78° F., 60% r.h.	10%
% at 95% r.h.	0.1%	Close to 1% at up to 95% r.h.	25% at 95% r.h.
lts at 480° F.	Melts at 260° F.; becomes tacky and shrinks at 150° F.; softens at about 170° F.; will not support combustion.	Will not support combustion. Shrinks above 275° F.	Up to 350° F., no eff strength above; melts at F.
tually none.	None.	Virtually none.	None.
es strength on prolonged exposure. No discoloration. Much more resistant behind glass than in direct sunlight.	None.	Darkens somewhat after prolonged exposure with some loss in tensile strength.	Very slow deterioration strength.
d resistance to most mineral ds. Dissolves with at least partial	None	Little or no effect	Resistant (mineral acids

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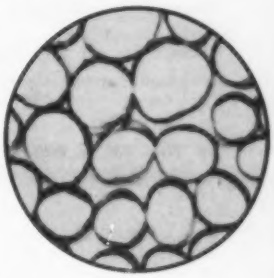
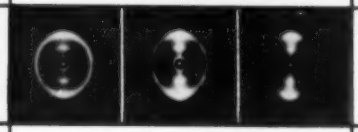
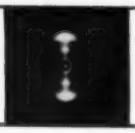
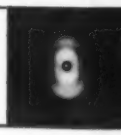
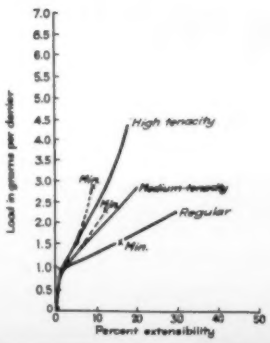
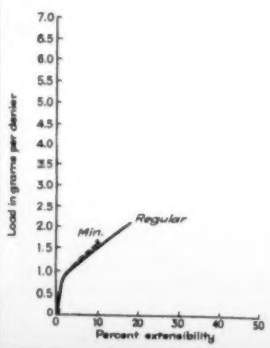
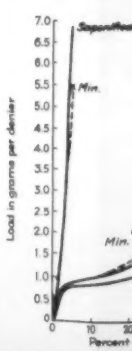
Comparative Properties of NATURAL FIBERS

Because of the wide variations in natural fibers, hardly two sources agree on physical and chemical properties. The figures given below apply to most fibers used in the U. S., but fibers undoubtedly exist that will exhibit properties beyond the ranges given here.

	COTTON	WOOL
Microscopic Appearance These cross-sections not only tell much concerning some properties of the fiber but are often useful for identifications. Not all photographs are the same magnification due to differences in filament sizes.		
Tensile Strength (g.p.d.)	American Upland: 3.0 to 4.9	1.0 to 1.7
	American Upland: 3.3 to 6.37	0.76 to 1.63
Elongation (%)	3 to 7	25 to 35
		25 to 50
Elastic Recovery (%)	74 at 2%, 45 at 5%	99 at 2%, 63 at 20%
Tensile Stress (psi.)	44,000 to 109,000	20,000 to 29,000
Average Stiffness (g.p.d.)	57 to 60	3.9
Average Toughness $\frac{\text{g.cm.}}{\text{d.cm.}}$	0.15	0.25
Specific Gravity	1.54	1.32
Regain (Adsorption)	7.0% at 70° F., 65% r.h.	16% at 72° F., 65% r.h.
Water Absorbency	24 to 27	21.9 at 90% r.h., 77° F.
Effect of Heat	Highly resistant to degradation. Yellows at 248° F. after 5 hr., decomposes at 302° F.	Becomes harsh at 212° F., decomposes at 266° F., scorches at 400° F., chars at 572° F.
Effect of Age	Little or none.	Little or none.
Effect of Sunlight	Loss of strength, tendency to yellowing.	Loss of strength, some effect on dyeing properties.
Effect of Acids	Disintegrated by hot dilute acids or cold concentrated acids. Unaffected	Destroyed by hot sulphuric acid, resistant to other strong and weak

Effect of Acids	concentrated disintegrate fiber.	concentrated disintegrate fiber.	acids decompose
Effect of Alkalis	Strong solutions cause swelling and reduce strength.	Dilute have little effect; strong solutions cause swelling, loss of strength, and ultimate disintegration.	Strong alkalis erated cellulose.
Effect of Other Chemicals	Attacked by strong oxidizing agents; not damaged by hypochlorite or peroxide bleaching solutions.	Not attacked by oxidizing agents; not damaged by hypochlorite or peroxide bleaching solutions.	Attacked by stro not damaged by oxide bleaching phenol. (Fortisa
Effect of Organic Solvents	Generally insoluble; soluble in cuprammonium and some other compounds.	Insoluble; soluble in cuprammonium solutions and some other compounds.	Soluble in aceto glacial acetic a vents. (Fortisan
Dyes Used	Same classes as cotton for regular viscose; medium- and high-tenacity are more difficult to dye.	Similar to viscose rayon and cotton.	Regular acetate and special ace affinity also for dant; all basic solvent dyes. S dyed with cotton increased by c similar to merce
Resistance to Moths	Wholly.	Wholly.	Wholly.
Resistance to Mildew	Attacked.	Attacked.	Highly (discolor
Dielectric Strength	Fair when dry.	Fair when dry.	3,000 volts per
Typical Uses	Yarn used for crepe, voile, and low twists for many woven and knitted fabrics; hosiery; tire cord. Staple used alone and in blends for dress goods and sports wear; in blends for rugs, blankets, upholstery, house furnishings. Many industrial uses.	Knitted and woven material for wearing apparel such as dress fabrics, gloves, and hosiery; upholstery and decorative fabrics.	Dress goods, linin wear, fused fabr blended) for me wear, blankets, u and for fusing. S light-weight fabr laces, threads, g industrial belting,
Method of Manufacture	Wood pulp or cotton linters are treated with caustic soda and carbon disulphide. The aged cellulose xanthate is dissolved in caustic soda and forced through spinnerets. Desulphurizing, washing, and bleaching of the yarn follow. Stretching the filaments while in a plastic state produces high-tenacity yarn.	Purified cotton linters dissolved in ammoniacal copper-hydroxide solution are extruded through a spinneret, drawn out in a water bath, and acidified.	Cotton linters o acetylated with ac form cellulose solved in aceton warm air to for elongation acetate modification of t ified acetate, by and saponification
Identification (in addition to cross-section and stress-strain testing)	Does not melt; burns readily with but little ash; insoluble in acetone.	Does not melt; burns with but little ash; insoluble in acetone; dissolves in ammoniacal copper solution.	Melts before bu black ball on tip; insoluble in meth ified cross section but tests like rege
X-Ray Diffraction Pattern Courtesy Chemical Research Dept., American Viscose Corp.			
Typical Stress-Strain Curves			

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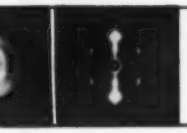
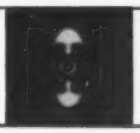
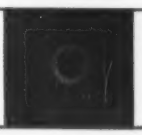
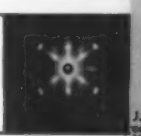
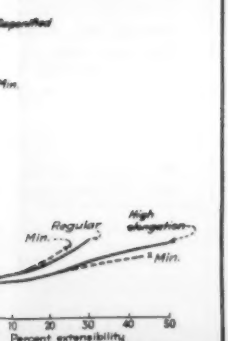
mpose.	position by cold concentrated solutions of hydrochloric, sulphuric, and nitric acids.	phosphoric only.	others.
alis saponify into regen-alose.	Substantially inert.	Attacked by hot solutions of weak alkalis and cold solutions of strong alkalis.	Unaffected by most; limite ance to ammonium hydroxi
y strong oxidizing agents; ed by hypochlorite or per-hing solutions; soluble in ortisan insoluble)	Generally good resistance.	Generally good.	Generally good resistance.
acetone, concentrated and tic acid, some other sol-rtisan not affected)	Generally insoluble; soluble in some phenolic compounds and in concentrated formic acid.	Insoluble.	Insoluble in most; but sw softened by oxygen-bearing such as cyclohexanone and d elevated temperatures.
etate dyed by vat, azoic, l acetate-rayon dyes; has o for some acid and mor-basic dyes; pigment and es. Saponified generally cotton colors. Dye affinity by cold alkali treatment mercerization.	All acid, acetate, pigment, chrome; some direct, vat, azoic, basic; few sulphur; mordant with special application.	Resin-bonded pigments. Special technique utilizing protein film applied during manufacture for vat, direct, acid, and chrome.	Colored before extrusion.
	Wholly.	Wholly.	Wholly.
iscoloration only).	Wholly.	Not attacked (binder may be, however).	Wholly.
per mil.	3,000 volts per mil (film).	Excellent.	500 volts per mil.
, linings, hosiery, under-l fabrics. Staple (often or men's and women's ets, upholstery, carpets, ing. Saponified used for fabrics for coating, ds, general reinforcing, elting, hose military uses.	Hosiery, satins, taffetas, marquisettes, ribbons, tapes, webbing, tricot underwear and gloves, laces, nets, threads, ropes, fish lines, tire cords, filter cloths, sail cloth.	Electrical insulation, plastic reinforcing, fireproof decorative materials, filter cloths, paper reinforcing, coated fabrics.	Monofilament Screening, upholstery, curtai cloth, shoe and handbag fal Staple: Outerwear, linings, protectiv ing, simulated fur, blanket fabrics, corsets.
ters or wood pulp are with acetate anhydride to lose acetate which, dis-acetone, is extruded into to form filaments. High-acetate is produced by a n of the process; sapon-e, by a special stretching fication process.	Nylon can be made in a number of different ways such as the reaction between a diamine (for example, hexamethylene diamine) and a dicarboxylic acid like adipic acid. In the manufacture of yarn, the polyamide is melted, extruded through a spinneret, and stretched.	Special-composition glass marbles are melted in an electric furnace which has many minute holes in the base, to form continuous fibers. The fibers are attenuated to the desired size. Staple fibers are attenuated and formed by steam or air jet.	Petroleum and salt are tr produce ethylene and chlori are combined to form vi chloride which is copolymeri vinyl chloride. The resultin is melted and extruded to f ments which are then orie
re burning, forms hard on tip; soluble in acetone; methyl chloride. Sapon-section similar to acetate, ke regenerated cellulose.	Melts before burning; insoluble in acetone or boiling NaOH solutions; soluble in concentrated formic acid and xylenol.	Does not burn.	Does not support combust melts; insoluble in acetone; in dioxan at elevated tempe

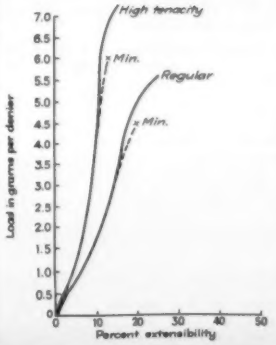


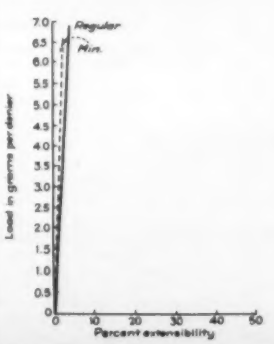


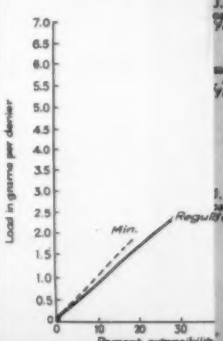












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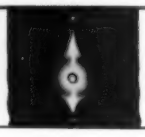
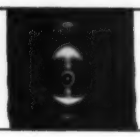
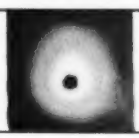
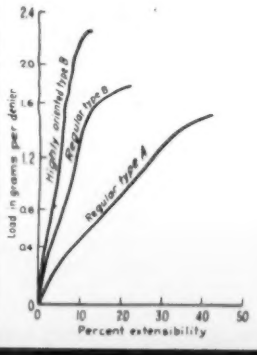
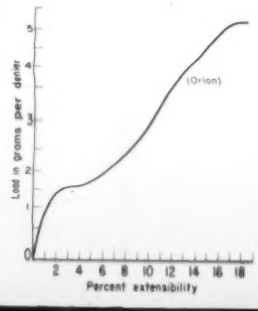
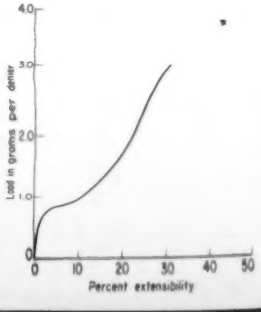
		[illegible] acid.		deco tions
d resist- le.	Very resistant.	Fair to good resistance to weak alkalis.	Little or no effect.	Gooc mode at ro by s erati
	Generally good resistance.	Not harmed by oils, greases, neutral salts, and some acid salts.	Weakened by ferric chloride in high concentration.	Gene resist oxidi
lled or solvents oxan at	Insoluble, but swollen at room temperature by chlorinated hydrocarbons, aromatics, and aliphatics. Becomes soluble in these at 160° F. Insoluble at elevated temperatures in aliphatic alcohols, glycerine, ether, carbon disulphide and acetone.	Not harmed by common solvents.	Weakened by 5% phenol; softened by acetone and certain other ketones.	Gene phen
	Pigmented before extruding.	Pastel to medium shades with resin-bonded pigments, vat, acetate and basic colors and acid colors with copper ion. Under pressure heavier shades may be obtained.	Acetate, acid, direct, some vat.	Acet rier press sol (
	Wholly.	Wholly.	Wholly.	Whol
	Wholly.	Wholly. (Material on the fiber may be attacked.)	Wholly.	Whol
	1,000 to 1,100 volts per mil. (Film)	Dielectric constant 6.5 at 60 cycles.		3,000
s, filter rics. e cloth- , filter	Upholstery, shoe, and handbag fabrics; braiding; draperies.	Industrial uses involving high temperatures and/or acid conditions; outdoor equipment such as awnings, sail cloth, rope, auto tops; apparel including shirts, sportswear, suitings; laminates; electrical insulation.	In 100% form: Pile fabrics, blankets, socks, industrial clothing, filter fabrics. In blends with cotton, rayon, or wool: blouses, draperies, bathing suits, sweaters.	Suitin sweat indus
ated to e. They nylidene ed with g resin rm fila- ted.	Ethylene at high pressure is polymerized to polyethylene resin. Resin is extruded into filaments which are oriented by cold drawing and then may be annealed.	Formed from polymer of acrylonitrile. A solution of the polymer is extruded, the solvent is removed, and the resultant yarn stretched.	A copolymer of vinyl chloride and acrylonitrile is dissolved in acetone, filtered, and then dry spun by means of extrusion, then cut into desired lengths.	Produ tion thalic yarn, trude stretc
n, but dissolves tures.	Melts at 230 to 250° F. depending on molecular weight. Floats on water; insoluble in organic solvents at room temperatures, soluble in toluene, xylene, carbon tetrachloride at 160° F.	Melts and burns, leaving hard black bead. Not affected by glacial acetic acid, chloroform, acetone, or 88% formic acid.	Will not support combustion; but shrink, harden, and become brittle.	Melts metac or co
				
				

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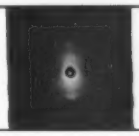
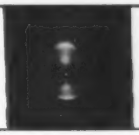
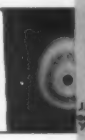
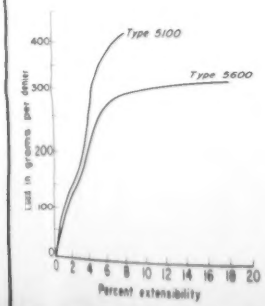
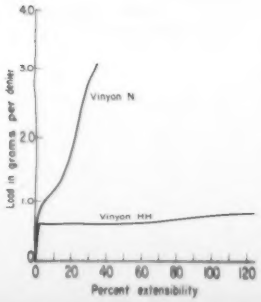
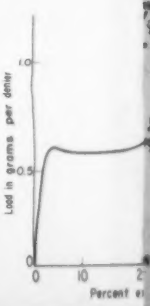
decomposition by concentrated solutions of sulphuric acids.			
Good resistance to weak alkalis and moderate resistance to strong alkalis at room temperatures. Disintegrated by strong alkalis at boiling temperatures.	None.	Little or no effect.	Insoluble in causti solutions.
Generally good resistance. Excellent resistance to bleaches and other oxidizing agents.	Generally resistant.	Weakened by ferric chloride in high concentration.	Very resistant.
Generally insoluble. Soluble in some phenolic compounds.	Soluble in ketones and some chlorinated hydrocarbons; swells and softens in ethers, esters, aromatic hydrocarbons, dioxan, propylene oxide.	Weakened by 5% phenol; softened by acetone and certain other ketones.	Insoluble.
Acetate, azoic, vat with aqueous carrier dyeing, aqueous dyeing under pressure without carrier, or Thermosol (fixation with dry heat) dyeing.	Dyed with dispersed dyes with aid of certain swelling agents; solvent methods; pigment dyeing.	Acetate, acid, direct, some vat.	Can be dyed with including alkaline v acid dyeing less tha
Wholly.	Wholly.	Wholly.	Highly resistant.
Wholly.	Wholly.	Wholly.	Resistant.
3,000 volts per mil. (film).	650 volts per mil. (60 cycle).		
Suitings, shirts, blouses, curtains, sweaters, socks, sewing thread, ropes, industrial beltings, fire hose.	Paper, rugs, carpets, bonded-fiber webs. Used as bonding agent in combination with other fibers.	Continuous filament: filter fabrics, dust fume bags, work clothing, dress goods, resist yarns, sail cloth, draperies; thread, pile fabrics, moulded fabrics, auto-window channels, and military fabrics.	Woven outerwear, holstery, pile fabrics Principally used in
Produced from a chemical composition of ethylene glycol and terephthalic acid. In the manufacture of yarn, the polyester is melted, extruded through a spinneret, and stretched.	A copolymer of vinyl chloride and vinyl acetate is dispersed in acetone, filtered, deaerated; then dry spun by means of extrusion. After standing, the filaments are wet twisted and stretched. Both continuous-filament and staple fiber are produced, but in case of staple no stretching is involved.	A copolymer of vinyl chloride and acrylonitrile is dissolved in acetone, filtered, and then dry spun by means of extrusion, then cut into desired lengths.	Prolamine fraction (zein) is denatured caustic. Solution is e cipitating bath. Res tertreated before staple.
Melts before burning. Soluble in hot metacresol, but not soluble in acetone or concentrated formic acid.	Softens at relatively low temperature (170° F.); melts before burning; does not support combustion; insoluble in acetone; insoluble in 90% phenol.	Will not support combustion; but shrinks, hardens, and becomes brittle.	Burns with bead; tone and hydrochlo
			







	[illegible]	by cold weak acids.	acids, even when heated.
s up to 10%	**Effect of Alkalis**	Swelling (mercerization) in caustics, but no damage.	Destroyed by strong alkalis, attacked by weak alkalis. Felts with agitation in mild alkalis.
	Effect of Other Chemicals	Bleached by hypochlorites; oxidizes into oxycellulose.	
	Effect of Organic Solvents	Resistant.	Resistant.
all usual types, at; shrinkage in n 5%.	**Dyes Used**	Direct, vat, azoic, basic, mordant, acid, pigment, aniline, indigo, naphthol, sulphur.	Acid, milling, chrome, mordant, vat, indigo.
	Resistance to Moths	Unaffected.	None unless treated.
	Resistance to Mildew	Poor unless bleached.	Good.
	Dielectric Strength		4.2 between 13 million cycles and 120 kilocycles.
knit goods, up-, hose, shirtings. blends.	**Typical Uses**	Underwear, outerwear, industrial fabrics, household fabrics, gauze, upholstery, knit goods.	Suitings, underwear, outerwear, blankets, knitting yarns, carpets, felt, upholstery.
of corn protein nd dissolved in truded into pre-lting tow is af-eing cut into	**Method of Manufacture**		
soluble in ace-c acid.	**Identification** (in addition to cross-section and stress-strain testing)	Burns rapidly, leaves fine gray ash and no bead. Longitudinal appearance is flat and ribbon-like with convolutions. Dissolves in 80% cold sulphuric acid.	Burns with disagreeable odor of burning feathers, leaves brittle, shiny bead. Yellows in nitric acid. Has longitudinal scales.
	X-Ray Diffraction Pattern		
30 40 tenability	**Typical Stress-Strain Curves**		

Supplement to Synthetic-Fiber Chart—1951 Revision

FOREIGN PRODUCERS of Synthetic Yarns and Fibers

VISCOSE AND CUPRAMMONIUM RAYON AND ACETATE

Key: V Viscose Rayon
C Cuprammonium Rayon
A Acetate

Continuous Filament	Staple	Company	Address	U. S. Representative*
ARGENTINA				
V	V	Ducilio S.A. Productora de Rayon	Berazategui	
V	V	Reysol, S.A.	Zarate	
A		Rhodiaceta Argentina, S.A.	Quilmes	
V	V	Sociedad Nuevas Industrias Argentinas Fibras Artificiales	Buenos Aires	None
AUSTRIA				
	V	Lenzinger Zellwolle, A.G.	Lenzing (U.S. Zone)	
BELGIUM				
V	VA	S.A. Fabelta (Union de Textiles Artificiels)	82 Rue Namur, Brussels	American Enka Corp., New York, N. Y.
BRAZIL				
A	A	Cia. Brasileira Rhodiaceta	Faustolo 1628 Sao Paulo	
V	V	Cia Nitro Quimicao Brasileira	Rua Boa Vista 88 Sao Paulo	
V	V	Cia. Rhodosa de Raion	Sao Jose de Campos	
V		Fabricas Brasileiras de Rayon, S.A.	Almirante Torres 119 Sao Paulo	
V	V	S.A. Industrias Matrazzo	Praca Patriarche Sao Paulo	
	V	Industrias Votorantim, S.A.	Rue 15 de Novembro 317 Sao Paulo	
V	V	Fiacao Brasileira de Raion Americana	Sao Paulo	None
CANADA				
V	V	Courtaulds (Canada), Ltd.	Cornwall, Ont.	
A	A	Canadian Celanese, Ltd.	Drummondville, Que	
CHILE				
V	V	Fabrica Victoria de Puente Alto, S.A.	Casilla 3619 Santiago	
V		Said, S. A.	Presidente Rios 6 Santiago	
CHINA				
V		Aloud Spinning & Weaving Mill (Aloud Rayon Plant)	Shanghai	
COLOMBIA				
A		Celanese Colombiana, S.A.	Cali	
V		Cia Columbiana	de Rayon, S.A.	Medellin
V	V	Indurayon Consolidada, S.A.	Barranquilla	
CUBA				
V	V	Compania Rayonera Cuba, S.A.	Matanzas	None
EGYPT				
V	V	Societe Misr pour la Rayonne	151 Shara Mohamed Bey Faird Cairo	
FINLAND				
V		A/B Kaukas Fabrik	Lappeenranta	
V	V	Sateri Oaskeytio	Valkeakoski	
FRANCE				
		Comptoir de Textiles Artificiels	Pierre Kaltenbach Co., 25 Vanderbilt Ave., New York 7, N. Y.	
V		Givet-Izieux	Besancon (Doubs)	
	V	La Fibranne de Bezons	Bezon (Seine-et-Oise)	
V	V	Societe de Filature de Rayonne	Argenteuil (Seine-et-Oise)	
V		Societe de la Viscose Francaise	Albi (Tarn)	
V	V	Societe Nationale de la Viscose	Gauchy (Aisne)	
V		Textiles Artificiels du Sud-Est	La Voulte (Ardeche)	
V	V	Etablissements Kuhlmann	Odomez (Nord)	
V	V	Les Files de Calais	Pont-de-lau (Pas-de-Calais)	

* (If none is named it does not necessarily mean there is none.)

Continuous Filament	Staple	Company	Address	U. S. Representative
FRANCE (Continued)				
V		La Societe Industrielle de la Viscamine	Pontcharra-sur-Breda (Isere)	
A		Societe Francaise de Tubize	Venissieux (Rhone)	
	V	Societe Industrielle de May	May-de-L'Aisne (Aisne)	
	V	Societe Industrielle pour la Rayonne	Avignon (Vaucluse)	
V		Societe Lyonnaise de Textiles	Decines (Isere)	
A	A	Societe Rhodiaceta	Lyon-Vaise (Rhone)	
	V	Textiles Artificiels du Centre	Roanne-Matel (Loire)	
	V	Textiles Artificiels du Rhone	Neuville-sur-Saone (Rhone)	
GERMANY				
	V	Badische Anilin und Soda	Fabrik Oppau-Ludwigshafen	
C		J. P. Bemberg, A.G.	Barmen-Oehde (Wuppertal)	
A	A	Deutsche Rhodiaceta A.G.	Freiburg	
C	C	Farbenfabriken Bayer	Dormagen	
V	V	Glanzstoff-Courtaulds G. m. b. H.	Koln-Marheim	
V		Kunsteidenfabrik Bobingen	Bobingen	
V	V	Paul Spindler K.G.	Hilden	
A		Lonzona, A.G.	Seckingen	
V		Mez, A.G.	Freiburg	
V	V	Rheinische Kunstseide, A.G.	Krefeld	
		Rottweiler Kunstseide, A.G.	Rottweil-Necker	
V		Spinnfaser, A.G.	Kassel	
V	V	Spinnstoffabrik Zehlendorf G. m. b.H.	Berlin-Zehlendorf	
	V	Suddeutsche Zellwolle, A.G.	Kelheim	
V		Vereinigte Glanzstoff-Fabriken, A.G.	Kelsterbach	
	A	Dr. Alexander Wacker, Gesellschaft fur Electrochemische Industrie G. m. b. H.	Muenchen-Burghausen	
GREECE				
V	V	Artificial Silk Co. Ltd. Elma	Athens	
INDIA				
V		National Rayon Corp., Ltd.	Kalyan	
V		Travancore Rayons, Ltd.	Perumbavoor	
ITALY				
VA	VA	Italviscosa, S.A.		
		Chatillon, S.A. Italiana per le Fibre Tessile Artificiali—S. p. a.	Chatillon	John J. Ryan, 25 Broad St., New York, N. Y.
V	V	Compagnia Industriale S.A. Viscosa (Cise Viscosa)	Rome	John J. Ryan. 25 Broad St., New York, N. Y.
C		Marelli & Berta		
V		Pirelli-Azienda Tessili Artificiali	Pizzighettone	N. Bessaggio 11 W. 42nd St. New York, N. Y.
C	C	S.A. Bemberg	Gozzano	None
V	V	S.A. Garli Industria Raion	Cusano Milanino	
V		S.A. Manifattura di Casale	Casale Monferrato	
V	V	S.A. Orsi e Mangelli	Forli	
V	V	Societa Nazionale Industria Applicazioni Viscose (Snia Viscosa)	Milan	John J. Ryan, 25 Broad St., New York, N. Y.
A	A	Societa Rhodiaceta Italiana	Verbenia	
JAPAN				
VC		Asahi Kasei Kogyo KK	1 Nihonbashi Muromachi 2-chome Chuo-ku, Tokyo	
	V	Dai Nippon Boseki KK	30 Azuchi-machi, 2-chome, Higashi-ku, Osaka	

Continuous Filament	Staple	Company	Address	U. S. Representative
JAPAN (Continued)				
A	A	Dai Nippon Seruriodo KK	3 Sueyoshibashi-dori, 2-chome, Minami, Osaka	
	V	Daiwa Spinning Co., Ltd.	1 Soze-machi, Kita-ku, Osaka	
	V	Fuji Boseki KK	1 Nihonbashi Honcho, 2-chome, Chuo-ku, Tokyo	
	V	Kanegafuchi Boseki KK	123 Tomobuchi-machi, Miyakojima-ku, Osaka	
V		Kokoku Jinken Parupu KK	13 Nihonbashi Kayabacho 2-chome Chuo-ku, Tokyo	
V	V	Kurashiki Rayon KK	1621 Sakazu, Kurashiki	
V		Nippon Rayon KK	5 Imabashi 3-chome, Higashi-ku Osaka	
V	V	Nitto Boseki KK	5 Ginza Nishi 2-chome, Chuo-ku Tokyo	
A	A	Shin Nippon Chiso Hiryo KK	1 Soze-cho, Kita-ku, Osaka	
	V	Shinko Rayon KK	2 Nihonbashi C-chome, Chuo-ku, Tokyo	
VA	V	Teikoku Jinzo-Kenshi Keihe, Ltd.	44 Edobori-Minamidori 1-chome, Nishi-ku, Osaka	
	V	Toho Rayon Co.	8 Nihonbashi Toyo Rayon Muromachi 2-chome, Chuo-ku, Tokyo	
V	V	Toyo Boseki KK	8 Dojima Toyo Boseki Hama-dori 2-chome, Kita-ku, Osaka	
V	V	Toyo Rayon KK	1 Nihonbashi Toyo Rayon Muromachi 2-chome, Chuo-ku, Tokyo	
MEXICO				
A	A	Celanese Mexicana, S.A.	Plaza Santos Degollado Mexico 1, D.F.	
V		Cellulosa y. Derivados	Apartado 1124 Monterrey, N.L.	
NETHERLANDS				
V	V	Algemene Kunstzyde Unie, N.V.	76 Velperberg Arnhem	American Enka Corp., New York, N. Y.
V		N.V. Hollandsche Kunstzyde Industrie, N.V.	50 Markkade Breda	American Enka Corp., New York, N. Y.
V		N.V. Kunstzijde-spinnerij Nyma	38 Waalbandyk Ni Jmegen	Ernest Rudinger, 350 Fifth Ave., NewYork 1, N.Y.
NORWAY				
	V	A/S Borregaard, Avd. Sepral	Sarpsborg	
V		Kunstsilkefabrikken A/S	Notodden	
PERU				
V		Rayon Peruana, S.A.	Lima	
PORTUGAL				
V	V	Companhia Industrial de Fibras Artificiais, S.A.R.L.	Rua do Almada, 262 Oporto	
V		Textil Artificial d'Oporto, Lda.	Rua Direita de Francos 108 Oporto	
V	V	Companhia Industrial Fibras Artificiais Lusitana	Oporto	None
SPAIN				
	V	Fabricacion Espanola de Fibras Artificiales, S.A.	Miranda de Ebro	
A	A	Industrias del Acetato de Cellulose, S.A.	Battlloria	
V		La Seda de Barcelona, S.A.	Prat de Llobregat	
V	V	Sociedad Anonima de Fibras Artificiales	Blanes	
V		Sociedad Espanola de Seda Artificial, S.A.	Burgos	
V	V	Sociedad Nacional Aplicaciones Industries Celulosa, Espanola, S.A.	Madrid	None
SWEDEN				
	V	A.B. Svenskt Konstilke	Boras	
V	V	Svenska Rayon Aktiebolaget	Valberg	
SWITZERLAND				
V		Feldmuegle A.G.	Rorschach (St. G.)	
V	V	Societe de la Viscose Suisse	Emmenbrucke	Schauer & Co., 72 Leonard St. NewYork 13, N.Y.
	V	Steckborn Kunstseide, A.G.	Steckborn (Thg)	
TURKEY				
V	V	Gemlik Artificial Silk Factory	Gemlik	
UNITED KINGDOM				
V		Brede Viscose Ltd.	Littleborough, Lancashire	
C		British Bemberg Ltd.	Doncaster, Yorkshire	
A	A	British Celanese Ltd.	Spondon, Derbyshire	
UNITED KINGDOM (Continued)				
	V	British Enka Ltd.	Aintree, Liverpool	
VA	VA	Courtaulds Ltd.	London	
V		Harbens Ltd	Colborne, Lancashire	
V		Kurkles Ltd.	Bury, Lancashire	
A		Lansil Ltd.	Lancaster, Lancashire	
V		Lustrafil Ltd.	Nelson, Lancashire	
A		Nelson's Silk Ltd.	Nelson, Lancashire	
V		North British Rayon Ltd.	Jedburgh, Scotland	
URUGUAY				
A		Sudamtex de Uruguay, S.A.	Colonia	

OTHER FIBERS

Type	Company	Address	U. S. Representative
BELGIUM			
Casein	S.A. Fabelta	82 Rue Namur, Brussels	American Enka Corp., New York, N. Y.
Vinylidene chloride. Polyethylene	Wathelet	67 Ch. de Waterloo Brussels	
CANADA			
Nylon	Canadian Industries, Ltd.	Kingston, Ont.	
FRANCE			
Rhovyl Fibrovyl Thermovyl Isovyl	Societe Rhovyl	Tronville-en-Barrois (Meuse)	Julian Carf, 267 Fifth Ave., New York, N. Y.
Rilsan	Societe Organico	38 Avenue Hoch Paris 8	
GERMANY			
Cuprema (staple cupra)	I. G. Farben	Duesseldorf	Thomas Hodges, 11 W. 42nd St., New York, N. Y.
Lanusa (wool-like rayon)	Badische Anilin & Soda Fabrik	Ludwigshafen	Thomas Hodges 11 W. 42nd St., New York, N. Y.
Perlon (similar to nylon)	Vereinigte Glanstoff Fabriken, A.G.	Obernburg	Thomas Hodges, 11 W. 42nd St., New York, N. Y.
Phrilon (similar to nylon)	Phrix Works	Neumuenster, Schleswig-Holstein	
NETHERLANDS			
Enkalon (similar to nylon)	Algemene Kunstzyde Unie, N.V.	Emmen	American Enka Corp. New York, N. Y.
ITALY			
Marinova (casein base)	Snia Viscose	Milan	Snia Viscose, 689 Fifth Ave. New York, N. Y.
Nylon	Soc. Elettrochimica del Toro	15 Rue Rugabella Milan	None
JAPAN			
Kuremona (Vinylon)	Kurashiyi Rayon Co., Ltd.	1621 Sakazu, Jurashiki	
Kanebian (Vinylon)	Kanegafuchi Spinng Co., Ltd.	123 Tomobuchi-machi, Miyakojima-ku, Osaka	
Newlon (Vinylon)	Dai Nippon Spinning Co., Ltd.	30 Azuchi-machi, 2-chome, Minami-ku, Osaka	
Woolon (Vinylon)	Japan Synthetic Fiber Co., Ltd.	2 Marunouchi 2-chome, Chiyoda-ku, Tokyo	
Vinylan (Vinylon)	Shinko Rayon Co., Ltd.	2 Nihonbashi 3-chome, Chuo-ku, Tokyo	
Amilan (Nylon)	Toyo Rayon Co., Ltd.	1 Nihonbashi Muromachi 2-chome, Chuo-ku, Tokyo	
Niplon (Nylon)	Nippon Rayon Co., Ltd.	5 Imabashi 3-chome, Higashi-ku, Osaka	
Kurehalon (Vinyl Chloride)	Kureha Spinning Co., Ltd.	28 Moto-machi 2-chome, Higashi-ku, Osaka	
Vinyl Chloride (Unnamed yet)	Asahi Chemical Industry Co., Ltd.	1 Nihonbashi Muromachi 2-chome, Chuo-ku, Tokyo	
NETHERLANDS			
Enkalon	Algemene Kunstzyde Unie, N.V.	76 Velpberg Arnhem	American Enka Corp., New York, N. Y.
SWITZERLAND			
Grilon (similar to nylon)	Grilon, S.A.	Zurich	
UNITED KINGDOM			
Alginate fibers	Courtaulds, Ltd.	London	Lustre Fibers, Inc., 350 Fifth Ave., New York, N. Y.
Ardil (azlon)	Imperial Chemical Industries, Ltd.	Nobel House, 2 Buckingham Gate, London, S.W., 1	Imperial Chemical Industries, Ltd., 521 Fifth Ave. New York, N. Y.
Terylene (polyester)			
Nylon	British Nylon Spinners Ltd.	25 Upper Brook St., London, S. W., 1	

THE POWER and boxing gauges were made in the mill shop. The pick-timing gauge is a standard Draper gauge. Dick Webb, left, a trainee, is holding the power gauge; Morton Williams, weaving overseer, center, has the boxing gauge; and the author, J. K. Bruton, right, is holding the pick-timing guage.

The TW Camera Shows You—

How Erwin Mills Uses LOOM GAUGES

▶ *Each loomfixer at Erwin Mills No. 5, Erwin, N. C., has three gauges: a stroke and power gauge, a pick-timing gauge, and a boxing and harness-timing gauge. They help get uniform settings and cut the time it takes fixers to do their jobs.*

▶ *The mill superintendent tells you how the loomfixers use the gauges and how they pay off—*

By J. K. BRUTON, *Superintendent, Mill No. 5, Erwin Mills, Inc.*

THE GAUGES THAT our loomfixers use take some of the guesswork out of fixing. Every person "feels" a setting a little differently, and no two men will stop the loom at exactly the same "top-center" when timing the pick.

With these gauges, the critical settings on all of our looms are the same. When a warp comes out, the fixer checks these settings with his three gauges. It takes only a few minutes.

The harness-timing gaug has really paid off. We weave denims; and, as you know, they must have the proper cover or face. We have always had a problem to get the cover uniform, and this gauge helps a lot.

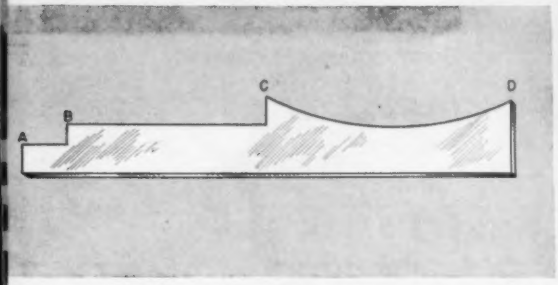
You, like most of us, probably have some fixers that can make settings better than others. These gauges have helped us train our old fixers and new ones, too, to set the looms as we want them. They let the fixers know exactly what the settings should be.

The loomfixers like the gauges because their jobs are easier. When a loom is flagged and a fixer uses gauges, he knows that the settings are right. He checks other things that might have caused the trouble. As a result, he can usually fix the loom more quickly because he can find the trouble easily.

The quality of our fabrics is up, we have fewer breakdowns, and we don't use as many repair supplies. Whenever we overhaul our looms, we use other gauges to set the batteries, etc.; but these three gauges are all that a loomfixer needs.

You can make your own gauges. The ones shown here are for our Draper model-E looms, and you will have to decide what settings you want before you make your gauges. I think that you will find them easy to make and easy to use. They will help you get better work.

1. Stroke and Power Gauge



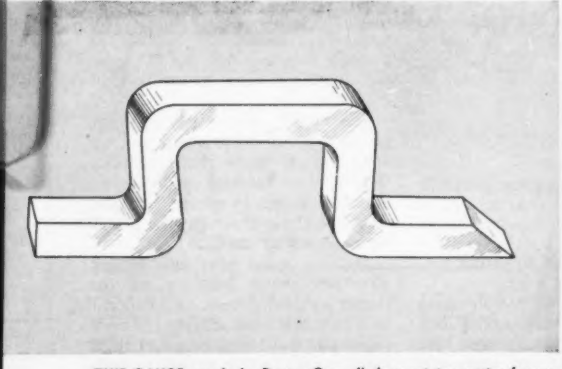
THIS STROKE and power gauge should be made from a metal that will bend fairly easily. This gauge is the one used for a Draper Model-E loom.

USE THE CURVED PART of the gauge to set the pick arm. Put D underneath the pick arm, and adjust until C rests on the short lug-strap-connector.

ADJUST STROKE with picker all the way forward. With B at the back of the picker stick, adjust the lug strap so that D is even with the end of the lay.

USE THE FULL LENGTH of the gauge to set the lug strap. With D on the heel of the parallel foot, adjust the lug strap so that it rests on A.

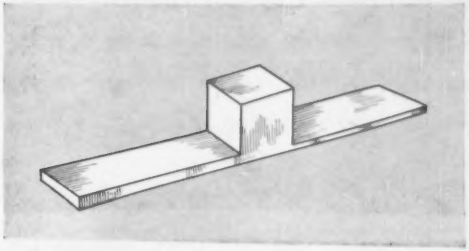
2. Pick-Timing Gauge



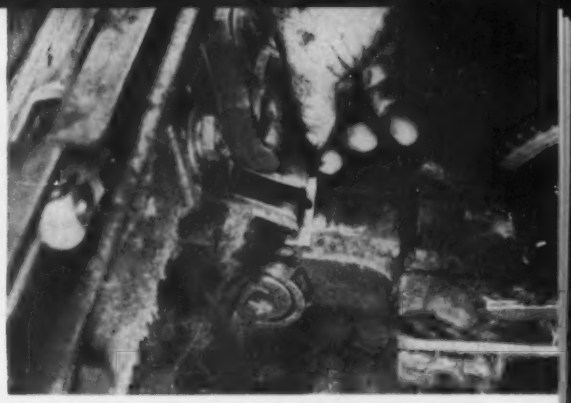
THIS GAUGE made by Draper Corp. finds exact top-center for you. With the square end at the back of the box, the pointed end will touch the loom stand.

WITH THE PICK-TIMING gauge set, push the picker to the back of the box. Adjust the cam until the lug strap has a slight movement—free but no play.

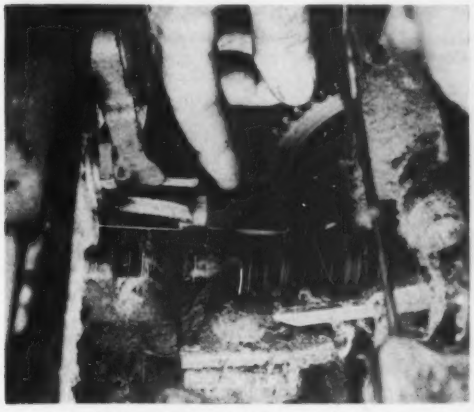
3. Box Harness-Timing and Protection-Motion Gauge



THIS GAUGE has many uses. You can use it to set the box, protector motion, and binders, and to time the harness. The proportions shown above are for a Model-E loom.

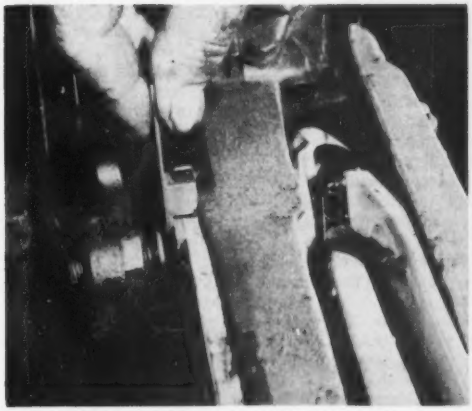


SET THE DAGGER to clear the frog by the thickness of the thin end of the gauge. The shuttle must be out of the box when the setting is made.



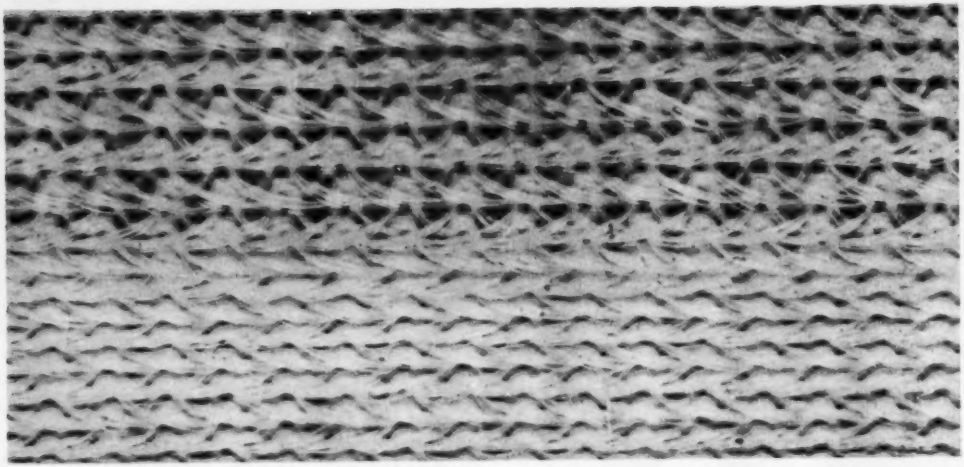
PUT THE GAUGE on the frog steel. Adjust the dagger stop until the dagger rests on the highest part of the gauge with all play out of the protector finger.

SET THE FRONT BINDER with the large end of the gauge and with the shuttle out of the box and not touching the wooden binder. Then center the shuttle point in the picker slot.



ADJUST THE BACK BINDER with the shuttle in the box. Make the setting with thick end of the gauge between the binder and protector finger.

TIME THE HARNESS with the reed the length of the gauge away from the fell of the cloth. Adjust the timing until the first two harness are level.

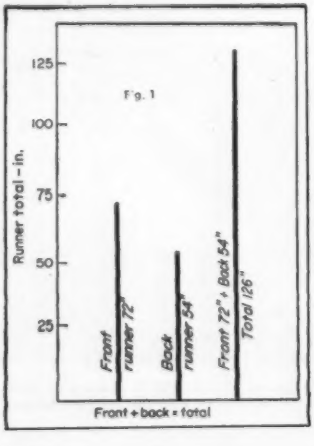


COURSES PER INCH and amount of yarn run in per rack of fabric can be changed by making mechanical adjustments on the machine. The illustration above shows a change from 11-in. quality to a 5½-in. quality.

An Approach to TRICOT-FABRIC Engineering

► *There are no standard rules to go by in designing a tricot fabric; so Textile Research Dept. set out to find some. A long-term research project described here has come up with some new postulates on how varying the runner lengths and ratios affects gray-fabric strength, yield, and courses per inch off the machine.*

By **RALPH STIMMEL,** *Knitting Div., Textile Research Dept., American Viscose Corp.*



DURING TESTS with an electronic warp-feeding device on a standard 168-in. tricot machine as used in the trade, a plan was formulated to make a series of fabrics employing different ratios, runners, etc. It was thought recorded data might serve as a foundation on which future scientific exploration of tricot-fabric characteristics could be based. The results of this research are presented in some detail in the data and charts accompanying this text.

Tricot knitters know that the amount of yarn run in per rack of fabric and the size of stitch (course per inch or quality) can be changed by making mechanical adjustments on the tricot machine.

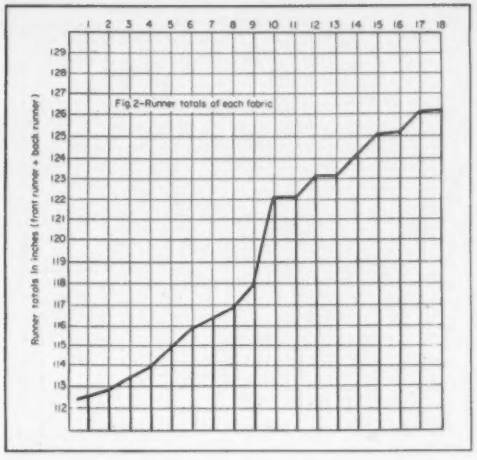
On some tricot fabrics, the thumb can be forced through the fabric without much difficulty, while on others there is more resistance.

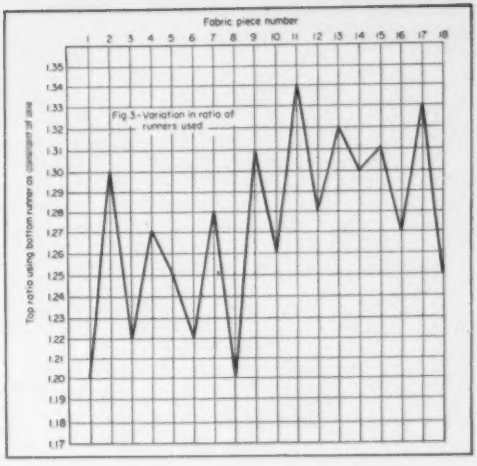
It was felt that, in all probability, if too much yarn was being fed from one warp in relation to the amount of yarn being fed from the other warp, when pressure was applied to the fabric, one set of warp threads would first become taut and rupture before the other set of warp threads would have completely absorbed its share of the applied force.

If this theory proved to be correct and a proper ratio could be found whereby both warp threads absorbed equal amounts of the applied force, then maximum strength could be obtained from a fabric having the proper ratio.

A Change of One Runner Affects The Other Runner

In tricot knitting, if the front runner is lengthened, the back runner will become shorter even though no adjustment is made on the control of the back warp. In a like manner, if the front runner is made shorter and no adjustment is made on the back warp let-off motion, the back runner becomes longer. Should an adjustment be made on the back warp only, the





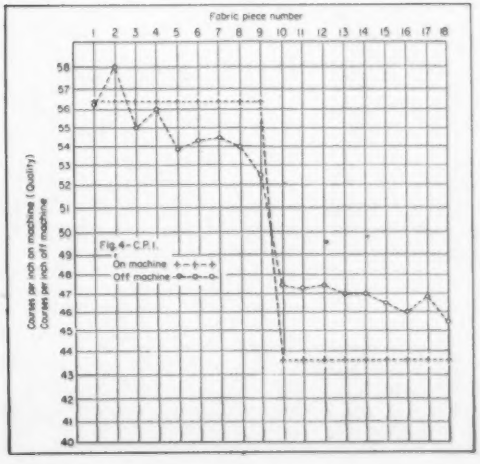
front warp runner will lengthen or shorten in the opposite direction of the adjustment.

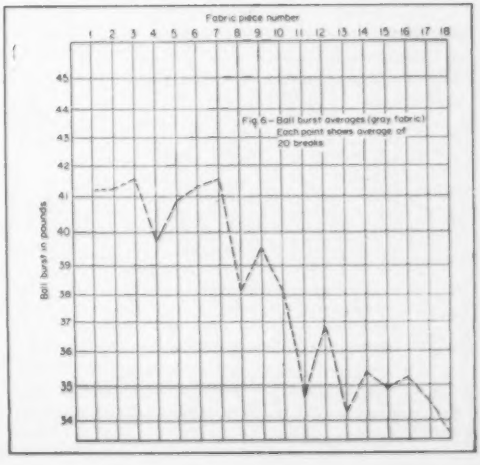
This phenomenon was first observed on a tricot machine with a brake let-off motion. It is also true with an intermittent brake let-off motion. These adjustments were one of the main reasons it was so difficult to change runners to a given specification when the experimental electronic warp control was used.

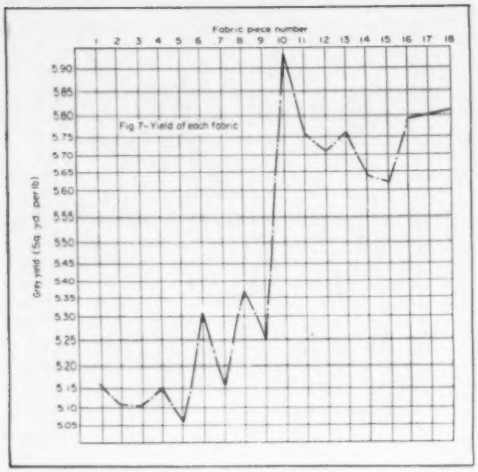
In the experiments on the electronic warp-control device, it was found that a number of things (many of which have been corrected) affected the electronic let-off control. As the warp diameter decreased, a correction was called for when the runner varied on one warp. The fact that one runner varied indicated that it influenced the other runner, which in turn effected a

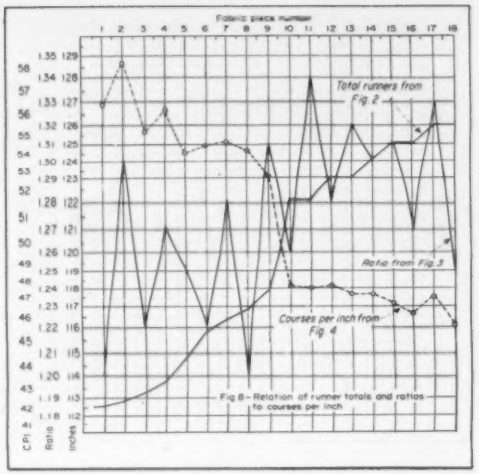
Fig. 5. FABRIC-CONSTRUCTION DATA

Piece Number	Runners → Front	Back	Total	Ratio	C.P.I. off machine	W.P.I.	Ball Burst	Yield
1	61.5	51	112.5	1.20/1	56.3	32.3	41.15	5.163
2	63.75	49	112.75	1.30/1	58	32.3	41.2	5.12
3	62.25	51	113.25	1.22/1	55	32.5	41.6	5.113
4	63.75	50	113.75	1.27/1	56	32	39.7	5.15
5	63.75	51	114.75	1.25/1	53.8	33.8	40.9	5.075
6	63.75	52	115.75	1.22/1	54.3	31.8	41.4	5.31
7	65.25	51	116.25	1.28/1	54.5	32.8	41.5	5.163
8	63.75	53	116.75	1.20/1	54	31.8	38.1	5.388
9	66.75	51	117.75	1.31/1	52.5	32.3	39.5	5.248
10	68	54	122	1.26/1	47.5	30.5	38.1	5.923
11	70	52	122	1.34/1	47.3	32.3	34.7	5.76
12	69	54	123	1.28/1	47.5	31.5	36.8	5.723
13	70	53	123	1.32/1	47	31.5	34.2	5.773
14	70	54	124	1.30/1	47	32	35.35	5.635
15	71	54	125	1.31/1	46.5	32.3	34.9	5.623
16	70	55	125	1.27/1	46	32	35.9	5.795
17	72	54	126	1.33/1	46.8	31.5	34.6	5.808
18	70	56	126	1.25/1	45.5	32	33.6	5.818








Fabric piece number
Total runners from Fig. 2
Ratio from Fig. 3
Courses per inch from Fig. 4
Fig. 8–Relation of runner totals and ratios to courses per inch
CPI
Ratio
Inches

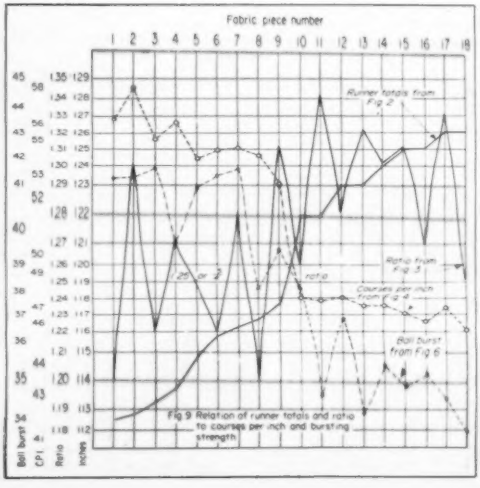
change, even though the other runner was running at the proper length per rack. This change in turn made both warp-drive-control devices "hunt" until an equilibrium was attained, which, of course, did not last too long as the diameter of the warps diminished continually. These runner changes in the fabric were small and gradual in most instances and no doubt would not be noticed by the finisher, cutter, or buyer; and for the present these may be considered insignificant. However, it is believed that these changes are reflected in our tests inasmuch as the recordings of individual tests were fairly consistent, except for an occasional result that apparently was out of proportion but that had to be included in our averages for lack of evidence to disqualify it one way or another.

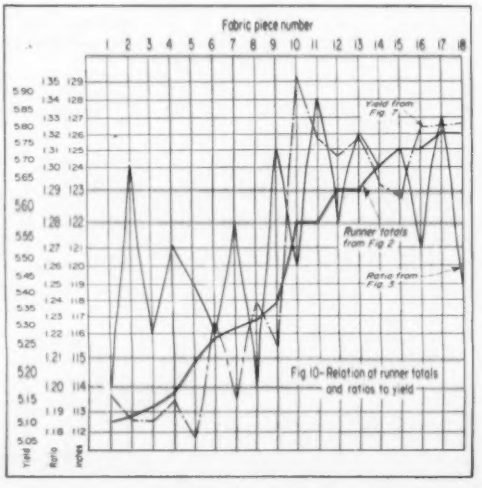
In this study of gray tricot-fabric characteristics, four identical sets were knitted with 18 different constructions in each set. Each fabric was knitted 200 racks in length from 55/14, low-twist, dull acetate yarn. The jersey pattern (front bar 2-3, 1-0; back bar 1-0, 1-2) was used for all fabrics. From the recorded information, graphs were plotted of the individual fabric characteristics. On the vertical coordinates are plotted the findings or test results. The horizontal coordinates of the graphs are the piece numbers of the fabrics for study. The sequence of the fabric piece numbers are the same on all graphs. The data were plotted this way so that these graphs could be superimposed on each other to allow observation of individual characteristics and the relation of each to the manufactured fabric that possesses these characteristics.

Runner Totals As a Unit

The starting point will be the known constant used in tricot knitting which is a rack (480 courses). The total length of yarn in one rack is the sum of top and bottom runners multiplied by the number of wales in the fabric. In the beginning, let the total runners be considered as the amount of yarn used by one guide of the front bar plus the amount of yarn used by one guide on the back bar. This run-

(Continued on page 250)


Fabric piece number
Runner totals from Fig. 2
Ratio from Fig. 3
Courses per inch from Fig. 4
Ball burst from Fig. 6
Fig. 9 Relation of runner totals and ratio to courses per inch and bursting strength
Ball Burst
CPI
Ratio
Inches



England's Most Modern WORSTED MILL

"It cost a lot of money, but we've got a lot of mill. We went all out for modern engineering in our buildings, machinery layout, mechanical handling, lighting, and control of air. We put in the most modern machinery, worked out a training program — and went at it. So far, we've trained 2,000 workers and still have another thousand to go. We've cut labor costs about a third."— Michael Wright, factory manager.

By E. WALFORD, McGraw-Hill, London

IN 1945, Patons & Baldwins took stock of their situation.

They had six worsted yarn mills scattered over Yorkshire and the Midlands, in England, but the times had caught up with them. The buildings were outmoded and so hemmed in that expansion or modernization was not possible. Labor was short, and the antiquated manufacturing methods were expensive.

They reached an important decision: Scuttle the six old mills and build one gigantic modern one at Darlington, in the northeast of England.

After a lot of leg work, brain work, and dickering with the government, actual mill planning began. The keynote was modern engineering. Some of the things Patons & Baldwins wanted were wide alleys, plenty of room for conveyors, straight-line flow of stock, housing and ground for future expansion, light, air and moisture control, and adequate personnel facilities.

When what they considered an ideal machine layout was devised, engineers were put to work designing walls, floors, and roofs around the machinery.

Building started Feb. 22, 1945, and was completed in early 1949. The first spinning frame was installed in Sept., 1947, and installation is still under way.

Early this year about 2,000 people were employed. When all of the 13 acres of spinning shed is filled with machinery, employment will be about 3,000.

TRAINING WORKERS. One of the more acute problems has been training workers.

At the government's request, the northeast of England was selected for the mill site because it was a "depression" area before 1939. Being farming country, it had no skilled textile workers available.

Patons & Baldwins took along 20 experienced people and started a mammoth training program. As trainees gained skill, many of them became trainers – and the supply of skilled operators began to snowball. To be selected as a trainer fired the workers with ambition and competitive spirit, and the mill wages have drawn people from the surrounding farm lands like a huge magnet.

With a really modern physical mill, Patons & Baldwins modernized in other directions.

Job loads were set by time-study methods, and wages are on piece-rate basis. Air and mechanical conveyors eliminated jobs and made others so much easier that the number of machines handled, in some instances, were multiplied.

Over all, labor cost per pound of yarn was cut about one-third.

Another direction in which outmoded thinking was ditched is in personnel relations.

A cafeteria with a seating capacity of about 2,000 doubles as a theater for shows from London and for local talent. There are tennis courts and bowling greens on the mill yard.

A continuing lecture course by the mill is aimed at good community relations and also at education in the use of the mill's hand-knitting yarns. Small groups of visiting women come to the mill to learn the best way to knit, wash, and press garments made of worsted yarn.

"Probably nine out of ten women in this section of the country knit at least five nights a week," C. D. Rothwell, merchandising manager, said. "They love these lectures."

On this and the following pages are shown some of the interesting engineering and machinery features of this new worsted yarn mill.

ROOF. Space and light, with little obstruction, were gained by single-story construction. Steel pillars are 108 ft.x62 ft. 8 in. apart. The saw-tooth roof, glazed for north light, also contains air-conditioning ducts. The roof was designed to withstand snow loading in excess of a 3-ft. layer. In 1947, a 4-ft. layer caused less than ½-in. deflection. A wind load of 15 lb. per sq. ft. was allowed for. Total weight of the roof is slightly more than 14 lb. per sq. ft. of plain area.

Floors are tile laid on a 6-in. concrete slab.

AIR CONDITIONING

A washed-air system of conditioning is used throughout the mill except in the wool warehouse. Eight conditioning rooms handle 1,873,000 cu. ft. of air per min. for 23,000,000 cu. ft. of mill space.

Air is exhausted from the room through duct openings in the walls and is carried through ducts under the floor to the conditioning rooms. Lint is removed by dry filters, and the air is drawn into a mixing chamber. Part of it is exhausted to the outside and replaced with fresh outside air. This mixed air is passed through washers to bring it to the desired humidity. Then it is heated to the proper temperature and recirculated to the mill through ceiling ducts 25 ft. above the floor.

The temperature of the recirculated air is usually higher than outside air because Darlington is in cold country, but in summer it is lower at times than outside air and has a cooling effect in the mill.

In wet-processing departments, temperature is maintained above dewpoint by blowing in warm air under thermostatic control. Condensation is avoided by a double roof with warm air circulating between.

CONVEYORS

P & B uses no storage bins. Everything is put in trucks and a special conveyor for trucks was devised.

The conveyor is a chain supported by steel beams resting on the ground in a channel left when the 6-in. concrete-slab floor was poured. It is covered by two steel plates at floor level. A 1-in. space is left between the steel plates, and the conveyor chain runs directly under this slot.

At 6-ft. intervals in the wool warehouse and 5-ft. intervals everywhere else, a metal pusher block is mounted on the chain. Each truck has a vertical rod at the center of one end that drops into the conveyor slot. This rod is engaged by the next pusher block that comes by, and the truck is pulled along, its wheels traveling on the two steel plates. The truck stops when the end rod is lifted, either by hand or when a collision with something else causes a spring on the box end to lift it.

The shortest of 13 conveyors is 380 ft. long and is driven by one 5-hp. motor. The longest is over 2,000 ft. long and requires two 7-hp. motors. Conveyor speed is 30 ft. per min.

STEAM, POWER, AND HEAT

Four 50,000-lb. Yarrow tubular boilers with automatic fire controls generate steam at 375-lb. pressure, 700° F. This steam is delivered to two of three 1,750-kw. back-pressure electric turbines, which exhaust it at 25-lb. pressure, 365° F. for plant processing and heating.

Closed coils are used for process and space heating. Condensate is returned to the boiler room, heated to 180°, stored in reservoirs, and reused.

First demand on steam is for processing. If the demand rises, more steam is exhausted through the turbines and more electricity is generated. If the demand for steam exceeds turbine capacity, the turbines can be by-passed through automatic valves that release steam from the boilers at the proper reduced pressure.

This power and steam plant, fed by coal conyevors, is operated by one engineer and three men per shift, as compared with five engineers and twelve men used at the plants now shut down.

Power is generated at 6,600 v., fed to 13 substations, and transformed to 415 v. The turbines generate about 3,500 kw. When P & B finishes installing machinery, the load demand will be about 12,000 kw. The power they don't generate is obtained from the British Electrical Authority 132,000-v. grid near the plant. It is stepped down to 660 v. on the spot and channeled into P & B's system at the turbine house.

WATER

Water from the Darlington main is pumped into a 1,000,000-gal. reservoir. From there, it is pumped into a permanganate-treatment plant to remove the iron content. Then it goes through a base-exchange plant to reduce hardness to zero. Two reservoirs, one for cold and one for heated processing water, store the treated water until it is needed.

All pipelines are of copper to guard against corrosion and water contamination.

Pipe mains, electric cables, etc., are housed in a 9x12-ft. service tunnel that runs from the boiler house to the dyehouse, water plant, spinning shed, and all other parts of the mill.

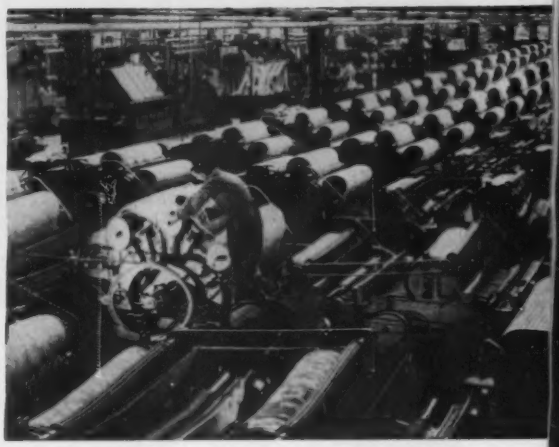
LIGHTING

Incandescent lights are used throughout the mill except over reels and winders. If fluorescent lighting becomes economical in England, they will change over.

P & B made exhaustive tests on the two types of lighting. In England, the installation costs of fluorescent lights is way above the cost in the U. S. and is about twice the cost of installing incandescent lights. Maintenance is about 80% higher for fluorescent. Over all, the yearly cost of fluorescent in England will be $7 to every $5 incandescent lights cost.

Lights over machines are not swung from the ceiling but are mounted on a frame built up from the machine. Rigid-pipe conduit used for the necessary electric cables is also used for constructing the frame that supports the lights.

THE WOOL WAREHOUSE is adjacent to one spur of the 2½ mi. of railway track on the mill yard. Wool is unloaded at bays outside the storeroom and moved into this room by a 2,070-ft. conveyor.



44 CARDS in a 720-ft. line are fed by two men working on a platform above the card feed hoppers. One man can feed 24 cards instead of the 6 that normally are a load.

SORTING TO CARDS

Bales of wool moved from the warehouse by conveyor are opened in the sorting and blending room adjoining the warehouse. Eight sorters work at conventional wool-sorting tables. Conveyor belts at the ends of the table receive the main sort and deliver it to an automatic feeder. This feeder regulates the flow of sorted wool to a blower fan, which delivers it to a cyclone blender.

The blender, located in the roof of a circular blending chamber, drops the wool on a spreader that distributes it to all parts of the blending chamber.

Two to four conveyors from the sorting room lead to each of eight blending chambers for botany wool and eight for crossbred wool.

Each chamber has a capacity of 20,000 lb. of wool.

From the blending chambers the wool is blown through ducts to the scouring and drying machines, where one man feeds two scouring sets.

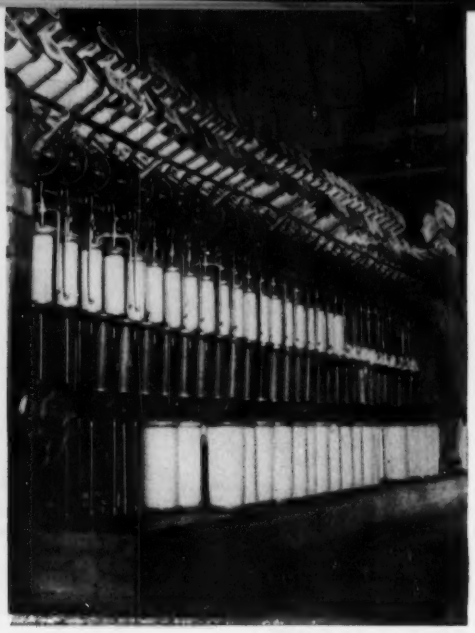
The conveying and blowing system used up to this point saves about 65% of the labor cost that would be involved without the system. The saving comes from eliminating manual handling of stock.

Wool from the driers is blown to reserve bins over the backs of the cards. The bins have duct openings above the card hoppers; and the card feeders, working on a platform at the back of the hoppers, feed the wool by hand through the ducts into the hoppers. Each card hopper holds 350 lb. of wool.

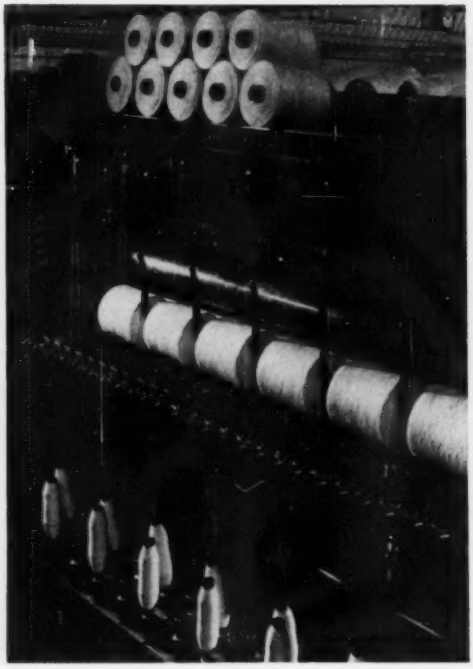
40 NOBLE COMBS in one line are installed over a tunnel. Noils drop through holes in the floor into bins in the tunnel and are blown to a noil packing room.

GILLING AFTER COMBING is in three operations at P & B: mixing gill boxes, the two-can boxes shown here in the foreground, and two-spindle boxes. The two-can boxes are equipped for top oiling.

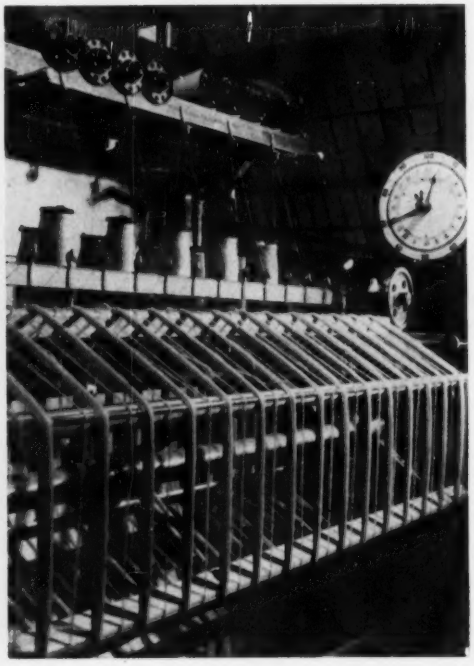
DRAWING PROCESSES at P & B include two-spindle, six-spindle, and twelve-spindle frames. A two-spindle frame being doffed is shown in this photograph.



ROVING FRAMES prepare yarn for three types of spinning at P & B: flyer, cap, and centrifugal. Flyer frames may be seen in the second picture of this article.



DOUBLING onto cheeses for twisting into two-ply yarn on centrifugal twisters. Three- and four-ply yarn is treated in the same way. Doubling is not necessary for PSC twisting, but P & B prefers it.



REELING after twisting and in preparation for scouring. At this point (including spinning shown on the next page), stock has flowed to one end of the main manufacturing area.

PSC SPINNING

The centrifugal spinning frames used by Patons & Baldwins are the PSC frames made by Prince, Smith & Stells. This system is basically a method for twisting and winding, since any drafting system can be used with it. P & B uses the roll system supplied by the manufacturer, but they also have two frames equipped with the Ambler system.

Yarn from the drafting rolls is led down through a plastic guide tube. The lower end of this tube extends into the spinning pot. As yarn flows out through the lower end of the tube, it is thrown against the side of the pot by the centrifugal force of the revolving pot. The tube traverses up and down to distribute yarn evenly up and down the pot.

The PSC pot is open at the bottom and closed at the top (except for the hole through which the guide extends).

The frame is set to spin a certain amount of yarn; and when that amount has been spun, spinning is discontinued and these actions take place automatically:

1. The drafting rolls stop.

2. The bobbin rail (shown in the accompanying picture with bobbins of full yarn on the spindles) moves upward into the spinning pot, with bobbins in place on the spindles.

3. A rubber sleeve on top of the bobbin spindle comes into contact with the lower end of the yarn delivery tube.

4. A nick in the rubber sleeve catches and holds the yarn to start the yarn unwinding from the pot onto the bobbin.

When winding to the bobbin is completed, nothing happens (except the pots continue to revolve) until the spinner does something. What she does is:

1. Lowers the spindle rail with the full bobbins of yarn to the position shown in the picture, and

2. Starts the drafting rolls.

Spinning and centrifugal winding then resume.

The full bobbins remain in the position shown until the spinner, at a convenient time, tilts the spindle rail forward and picks the bobbins of yarn off the spindles by hand.

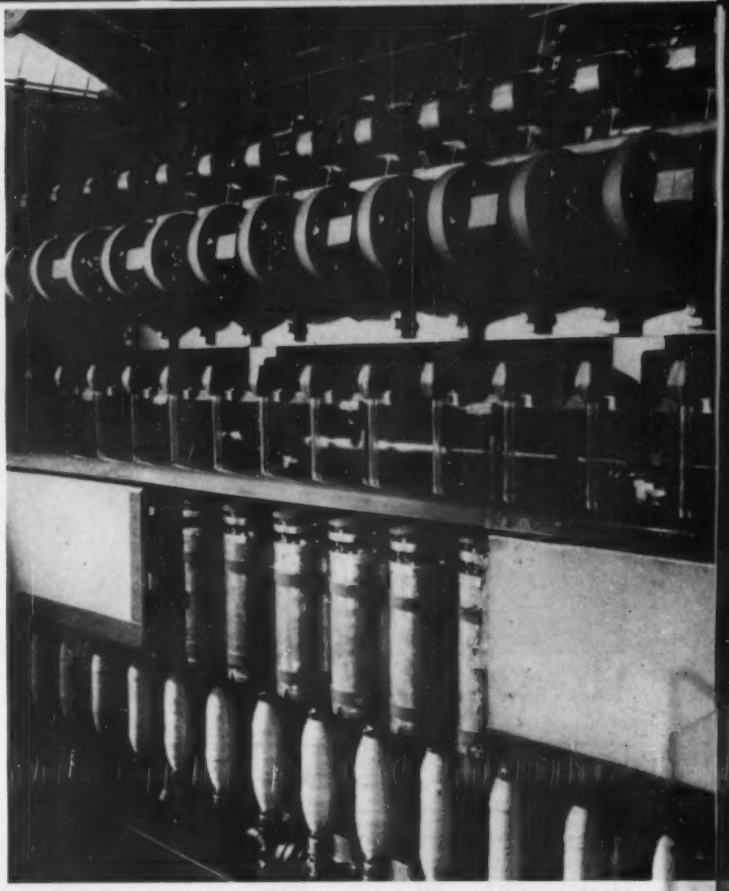
Doffing time is about 2 min. for winding the bobbins and about ¼ to ½ min. for the other doffing operations.

Pot speeds are 11,500 to 13,500 rpm.

P & B has spun up to 80s worsted yarn on production runs and with Ambler drafting have drafted up to 120. Package sizes up to 8 oz. net weight of yarn have been spun.

Horsepower per pound of yarn is about 1½ times that required for cap or flyer spinning.

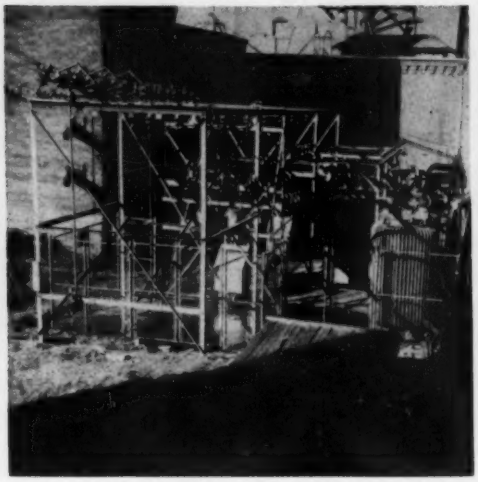
Yarn appearance differs slightly from yarn spun on other frames. It is fuller and softer, and for that reason PSC spinning may be objectionable for some yarns — certain worsted suitings, for example, where a tight, smooth yarn is needed.



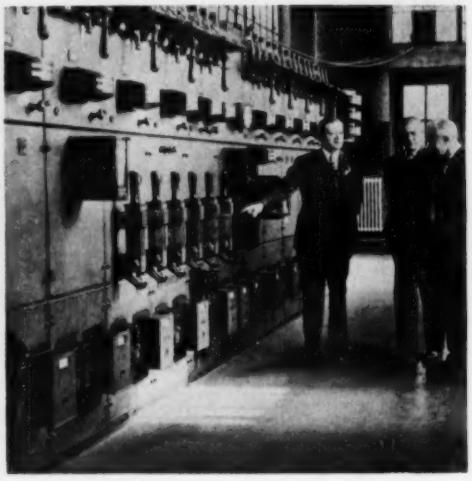
POT SPINNING FRAME twists and winds yarn by centrifugal force. Frames at P & B have 64 pots (spindles) per side. On 24s yarn and finer, one spinner creels, spins, doffs, and cleans four sides. On yarns coarser than 24s, a spinner has three sides. On twisters, an operator runs four to six sides.

SKEIN DYEING is done in stainless-steel vats equipped with electric loading and unloading hoists. Each vat has a timer for indicating the dyeing cycle.

THE OLD SYSTEM

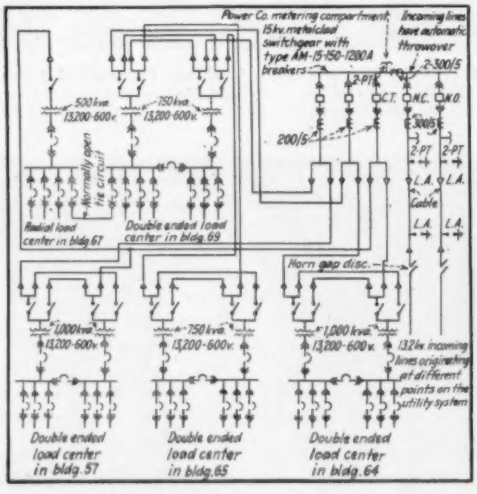


1 *ONE 13.2-KV. TRANSMISSION LINE supplied stepdown transformers located outdoors next to the main substation building.*

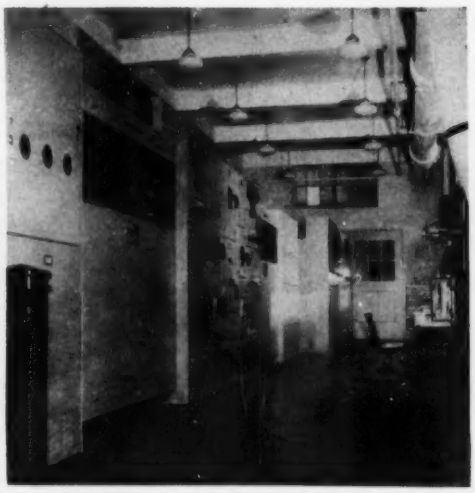


2 *A 550-V. SWITCHBOARD was supplied from two banks of single-phase transformers with a total rating of 6,000 kva.*

THE NEW SYSTEM



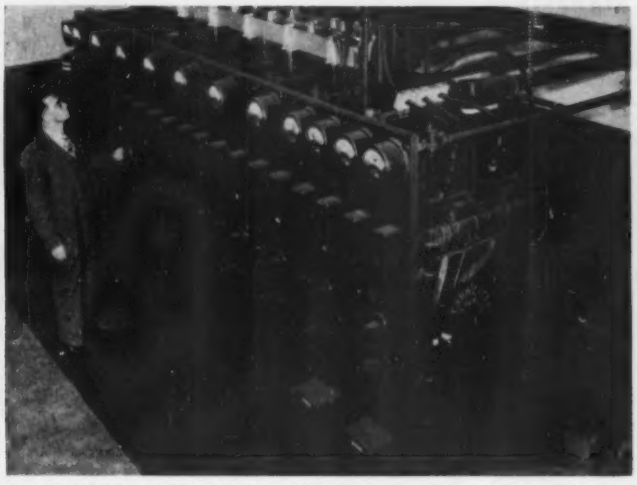
1 *NEW DISTRIBUTION SYSTEM, shown in one-line diagram above, replaced the old central substation and 600-v. radial feeders.*



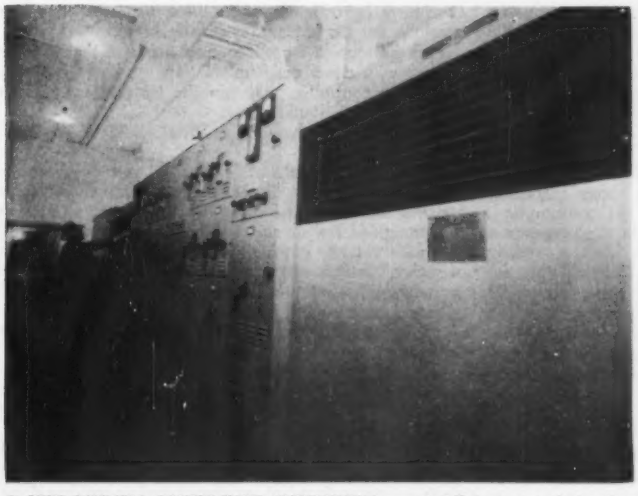
2 *THREE 15-KV. METAL-CLAD SWITCHGEAR UNITS were installed as the first step in the distribution-modernization plan.*

Modern POWER SYSTEM
Benefits Bigelow-Sanford . . . . . .

BY
H. L. STIEGLER
Chief Project Engineer
Bigelow-Sanford Carpet Co.
and
R. M. CRENSHAW
Industrial Engineering Div.
General Electric Co.



3 *DISTRIBUTION PANELS throughout the factory were supplied by many feeders from the 550-v. switchboard.*



3 *FOUR 2,000-KVA. DOUBLE-ENDED SUBSTATIONS were installed at strategic locations near critical load areas.*

. . . by assuring flexibility and reliability of operation

. . . by eliminating flickering lamps and low voltage at motors

. . . by providing for future changes

PUTTING IN A MODERN power plant has enabled Bigelow-Sanford Co., Amsterdam, N. Y., to eliminate flickering lamps, low voltage at motors, and overheated knife switches. The new system meets current plant demands and is designed to accommodate future changes. Flexibility and reliability are assured by incorporating primary and secondary selective connection of load-center substations.

The modernization plan provided for building the new system in steps. The first step called for installation of three units of indoor, high-voltage, metal-clad switchgear and one double-ended load-center substation, rated 2,000 kva. (two 1,000-kva. transformers per substation). This equipment was ordered without delay. A temporary connection was made between the existing outdoor 13.2-kv. bus and the new metal-clad switchgear. This connection made possible the use of these units before the incoming-line units were installed. Then, two 13.2-kv. feeder cables were installed to supply the double-ended substation that was placed in an area where the old system seemed most severely overloaded.

Failure of Old System Accelerated Program

Succeeding steps could have been made over an extended period, installing one new substation at a time and finally completing the primary switchgear and incoming-line connection. However, before equipment to complete the first step could be delivered, several equipment failures caused production delays and emphasized that modernization had started none too soon.

Orders for the remainder of the electric power equipment were placed, and the system was completed in record time.

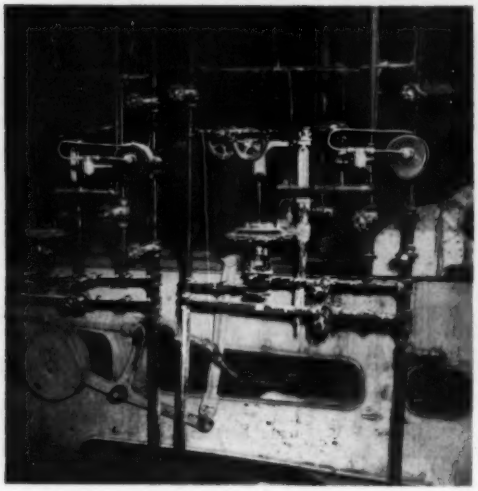
Some temporary connections were required during installations. But most of the new equipment was installed in locations different from the old, hence no major interruption to production was necessary. Changes of incoming-line connections were timed to coincide with the plant-vacation shutdown.

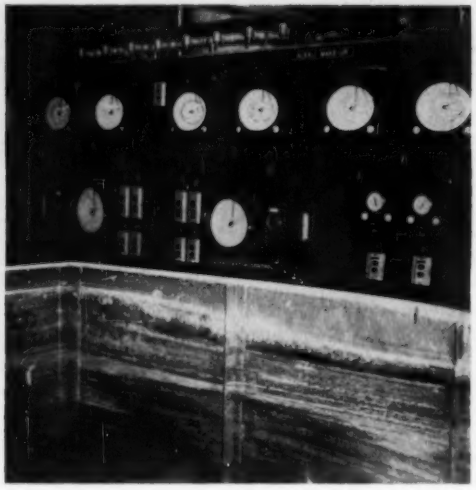
This plan was based on the use of modern power-distribution equipment

(*Continued on page 256*)

FLOW MEASUREMENT Helps Woolen Mills

By **HERMAN KOCKRITZ,** *Southeast Field Manager, Fischer and Porter Co.*





IN THE SCOURING TRAIN at Peerless Woolen Mills, Rossville, Ga., the liquor is continuously drawn off through a flow-control instrument to a centrifuge. After wool grease is extracted, the reclaimed soap solution is automatically proportioned with soda-ash makeup and used again. Accurate flow to the centrifuge is necessary for sharp separation of the scouring liquor from the wool grease. This equipment controls one five-bowl and one four-bowl scouring train. Batch controllers (at the bottom of the control panel) charge the beginning of each scouring run. Four controllers (top, right) are for alkali make-up. The four controllers at the left are for soap make-up.

Push buttons govern selection of the bowl that is to be charged with either make-up solution.

Separate controllers maintain the temperature of soap and alkali storage tanks.

IN MIXING PICKERS, flow-rate indicators help to control the flow of oil to the sprays to obtain maximum lubricating uniformity and minimum oil consumption. In the blending of this oil and water in the preparation of the oil emulsion, a ratio controller is used to emulsify the exact proportions of oil and water. Not only does the ratio controller proportion these two fluids more accurately than previous batch methods, but it mixes only as the demand requires and eliminates the intermediate batch preparation of the emulsion. When the mill shuts down, there is no excess emulsion lying in the storage tank to deteriorate.

IN WARP SIZING, starch-viscosity instruments continuously control the viscosity of the starch by controlling the water content of the solution.

IN CARBONIZING, the machine must be supplied with a continuous make up of weak acid. A flow controller is properly applied to the control of this acid feed. The controller is equipped with a pneumatic set-point bellows that picks up a pneumatic signal from a pH controller. With an arrangement of this sort, the flow controller on the weak-acid line maintains a constant rate of flow and eliminates hydraulic variables that disturb the pH controller. The pH controller makes automatic vernier settings on the rate-of-flow instrument.

In the preparation of this dilute sulphuric acid (carbonizing solution), ratio controllers are used to proportion the strong 66° Baume acid (which is received in the tank car) with water to provide the weak solution. By the use of such a continuous-ratio controller, batch preparation of the weak-acid solution is eliminated, and the acid is mixed only as it is needed. Expensive storage tanks are eliminated, and there are no weak-acid troubles when the mill shuts down.

IN DYEING, at the end of each outlet, an indicating flow-meter and a differential regulator with needle valve are recommended to set the rate of flow of the acid required. The acid should be fed slowly and never dumped in all at once. Each machine can be equipped with a hand-set electric timer with a bell or other visual or audible alarm arrangement. The operator, knowing how many gallons of acid are required for his particular formula, needs only to set his meter at a given reading on the flow scale and set his timer. When the alarm sounds, he shuts off the flow. The process is repeated for all the machines to which he is assigned. The acid supply to the distribution system would adapt itself, of course, to continuous-proportioning makeup from the strong-acid storage rather than the batch method now in general use.

ALL SPINNING FRAMES at the Victor Plant are equipped with Pneumafil-central equipment. Number one spinning room is on the top floor of the building shown; number two mill adjoins this building to the right. On the roof is the penthouse that carries exhaust air from the spinning room to the air-conditioning apparatus room.

THE PNEUMAFIL PENTHOUSE extends practically the entire length of the room and has a "T" connection into the apparatus tower. Fans in the penthouse supply air suction for the Pneumafil system. Relief dampers can be seen in the sidewall of the penthouse along with outside intake dampers in the sidewall of the apparatus tower.

HERE'S THE NEW PNEUMAFIL-CENTRAL System

WHAT IS IT? . . . A Pneumafil system with central fans that operates in conjunction with a central air-conditioning system.

WHAT ARE ITS BENEFITS? . . . They all add up to lower spinning costs, higher quality yarn, greater production, and balanced humidification.

Here's the story of the installation at the Victor Plant, Victor Monaghan Co., Div. of J. P. Stevens & Co., Inc., — the first installation of its kind in the United States.

By W. A. THOMASON, JR., Southern Editor, TEXTILE WORLD

A PNEUMAFIL SYSTEM of the central type has recently been installed, along with new spinning machinery, in both spinning rooms of the Victor Plant, Victor Monaghan Co., Div. of J. P. Stevens & Co., Inc., Greer, S. C.

This system, termed "Pneumafil-central," works in conjunction with the air-conditioning system serving each room. The central type employs conventional equipment with regard to the intake nozzle or orifice at each spindle, main duct installed in the frame, and the waste-collector unit at the end of the frame.

At this point, similarity ceases. The units do not have individual fans. The discharge air from the waste collector, instead of being discharged into the spinning room, joins the air from other frames and is drawn through a system of ductwork into a penthouse located on the roof. A central fan, located in the penthouse and over each motor alley, has the required capacity to exhaust air from all frames.

Air, drawn through the waste collector and accompanying ductwork to the fan, is discharged into the penthouse, which is in turn connected to the return-air dampers of the air-conditioning system. Automatic relief dampers in the sidewalls of the penthouse discharge air to the outside when return air is not required by the air-conditioning plant.

Although the amount of air drawn from each spindle by the Pneumafil system is subject to certain variables, a fairly close balance exists between the total air withdrawn and total amount supplied for proper air conditioning. The air drawn from the rooms by Pneumafil-central serves as return and/or exhaust air for the air-conditioning system.

The path of air entering the room is through the supply ducts and into the room where an essentially equal amount is drawn to each individual spindle. This not only accomplishes near-perfect distribution but also pulls humidity into the frame where yarn is being processed and heat is being generated. To the air-conditioning engineer, such an arrangement represents the ultimate in air distribution. To the textile manufacturer, it means correct and equal regain for all yarn throughout the entire room.

To operate the air conditioning on weekends, a series of dampers in the ceiling between the spinning room and penthouse are opened automatically by a combined control system. In addition, a series of small openings between the spinning room and penthouse equalizes the pressure between the two spaces in the event that an unbalance does exist between the air supplied and the air exhausted.

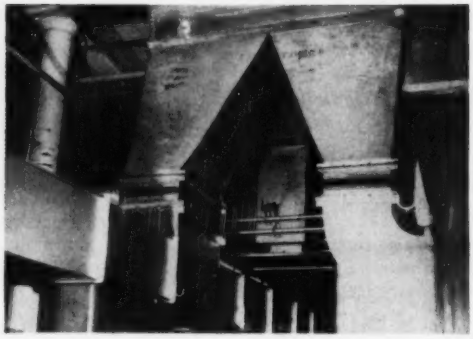
The penthouses extend practically the full length of each spinning room, and each one has a "T" connection into the air-conditioning apparatus tower. Each penthouse is of frame construction, completely insulated, and has smooth interior surfaces.

The air-conditioning system is of the central-station, split type and employs refrigeration and booster atomizers to maintain 50% relative humidity at an 80° F. effective temperature.

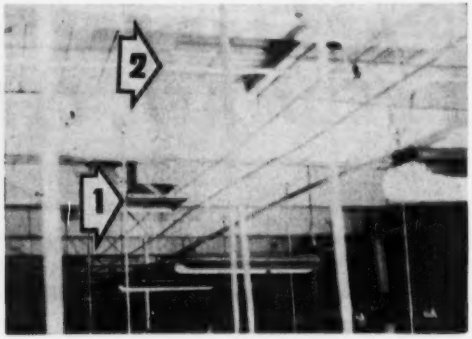
Several important operating economies have been realized by the Victor plant through use of Pneumafil central

"SPINNING IS EASIER" says Jesse Mae Emery to James Garren, assistant overseer, as they discuss the new central installation. The Pneumafil-central air-conditioning combination reduces cross currents of air in the room because return air leaves the room via each individual orifice.

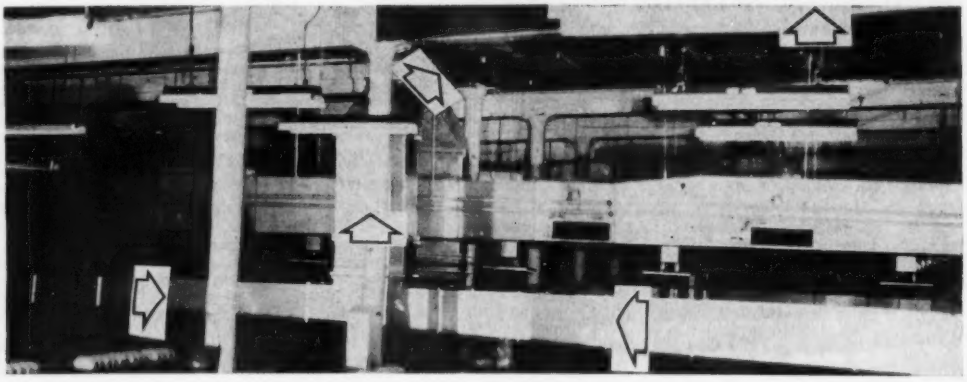
EACH FRAME has a standard Pneumafil waste collector. Although several European mills have experimented with central waste-collection systems, the individual waste collectors are used at the Victor plant because waste from the various blends must be kept separate for reprocessing.



A SYSTEM OF DUCTWORK connects the waste collectors of a complete line of frames across the mill at each motor alley with the central fan mounted on the roof. Because of the high vacuum pressure, all ductwork must be heavy gauge, gasketed at joints, and braced internally for stability and airtightness.

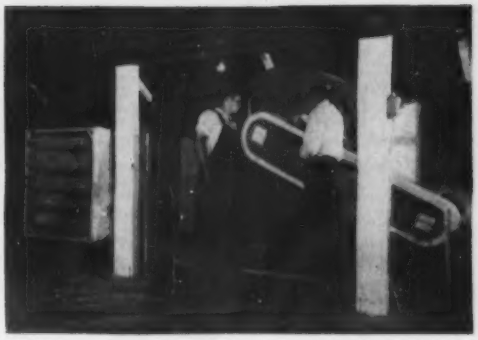


OPENINGS (1) between the ceiling of the spinning room and the floor of the penthouse provide balance between the amount of conditioned air entering the room and "Pneumafil air" leaving the room. Return-air dampers (2) are opened on weekends or if any part of the Pneumafil system is not operating.



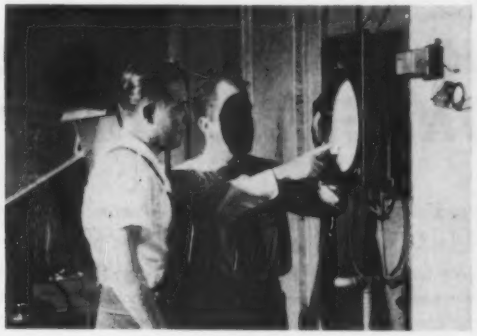
AIR TRAVELS from the waste collectors to the fan above as shown by the arrows. Conditioned air enters the room through regular air-conditioning ducts above the Pneumafil header. No increase in conditioned-air quantity was required as a result of the Pneumafil installation, since all of its motors are located outside the conditioned area. Gravity-type atomizers, which furnish supplementary moisture, can be seen directly over the air outlets. A spinning-room relative humidity of 50% is maintained.

THE INTERIOR SURFACE of the penthouse is smooth, both to reduce friction of air flow and to facilitate cleaning. Overseer F. E. Jackson, left, is shown as he checks the flow of air through an air-equalizing opening with Asst. Supt. Otis Little. A return-air damper for weekend use (on the floor) and one of the fans with duct connections to waste collectors are in the background.



POWER REQUIREMENTS, maintenance costs, and replacement parts required are less with Pneumafil-central than with the individual type. Strict preventive maintenance, however, is necessary because a fan or motor failure would stop off from 24 to 32 frames. James Williams, left, air-conditioning foreman, is shown as he checks a bearing with N. R. Wilson, master mechanic.

JAMES WILLIAMS is shown as he throws the automatic switch to "weekend" position. This action opens the return-air openings so as to by-pass the Pneumafil system and places the air-conditioning system on weekend control. Automatic dampers on each fan prevent back flow of air when the fans are not operating.



CONDITIONED-AIR SUPPLY to the room must be kept at a constant temperature. N. R. Wilson, right, is shown as he checks the dewpoint recorder-controller in number two mill with James Williams. The saturated air leaves the washer at 58° F., and an effective temperature of 80° F. is maintained in the spinning rooms.

as compared with the unit type. Less power is required to drive the Pneumafil fans since one large fan can be selected with a greater over-all operating efficiency than that of a series of small fans. Since fans and motors are located outside the conditioned space, it is not necessary to increase the air supply or booster atomizers to absorb this heat.

There have been cases in the past where the addition of unit-type Pneumafil, with motors in the spinning room, has overloaded the air-handling capacity of existing air-conditioning equipment. Tests are currently underway to determine if the total air supplied can actually be reduced as a result of the improved distribution provided by the addition of Pneumafil-central.

Numerous other benefits have been realized as a result of the Pneumafil installation. Some of these may be attributed to the central type, and others are inherent in the Pneumafil principle. Foremost is the ends = down doubling problem.

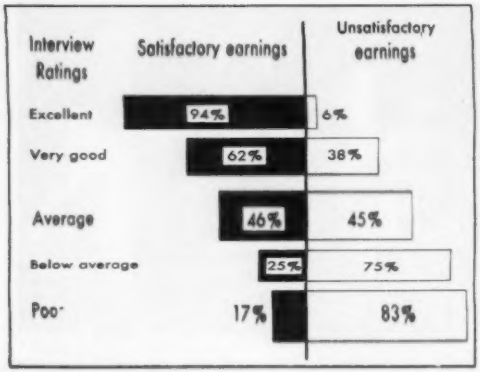
Previously, when an end came down, there was a tendency for it to be blown over into the adjacent end by air currents set up by motion of the spindle itself. This action resulted either in a corkscrew yarn or another end down. Frequently, as many as four to five ends would be blown down as each end down was blown successively over.

Moreover, it was necessary to instruct spinners to break out adjoining ends to check for a possible corkscrew before piecing up a single end found down. All these costly troubles disappeared at the Victor plant with Pneumafil since an end down is immediately pulled into the Pneumafil orifice and is held there until pieced up by the operator.

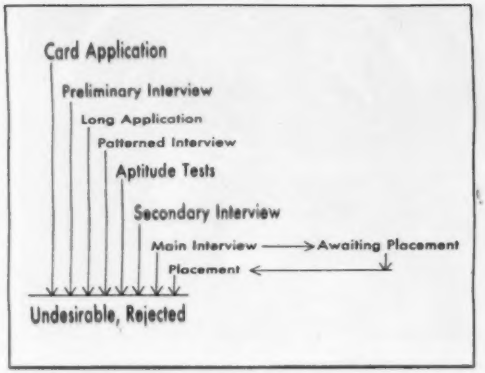
With the addition of Pneumafil, higher spindle and front-roll speeds have been possible at the Victor plant. Planning is also easier since there is no need for colonization of various styles and blends. As a further aid to production, overhead automatic cleaning can be more successfully used.

Spinning-frame repair and upkeep have been reduced, since the cost of replacing and repairing scavenger rolls has been eliminated and there has been a marked reduction in the repair and replacement of steel rolls.

With the separate and higher waste recovery of the individual waste collectors, mixing of various blends is eliminated. Also, the string picker may be eliminated in the waste-recovery process.



ACCURACY OF SELECTION PROCEDURES at Van Raalte after patterned interviews were installed is indicated by this chart showing the number of workers in each rating, from excellent to poor, who lived up to expectations.



DAN RIVER follows this flow chart in selecting sales candidates. Since delays frequently result in loss of desirable candidates, the schedule is consummated in five days. A patterned interview plays an important part in the selection process.

How Four Mills Improved INTERVIEWING Techniques

► *Interviews are something that most of us either conduct, pay for, or go through. Yet few interviews or interviewers produce the same result, and labor-turnover and grievance figures indicate that few really accomplish their selection function. Here's how four mills tackled improvement of interviewing and how it paid off in less turnover and worker dissatisfaction.*

By MONROE B. SCHARFF

PRACTICALLY EVERYONE in a textile mill, from the president on down, goes through one or more interviews in the hiring process. But interviewers, as a rule, fall down on the job of really selecting the right person for the right job. The result is high labor turnover and worker dissatisfaction.

To attempt to do a better job of getting the square pegs in the square holes, Van Raalte Co., Dan River Mills, Aberfoyle Mfg. Co., and Bigelow-Sanford Carpet Co. have seriously tried to improve interviewing techniques. Some use patterned interviews or some modification of them, but whatever the method tried, results have been better than with previous interviewing methods.

Why Most Interviews Fail

The notion that an interview can serve as an effective scientific selection tool is comparatively new. But even in recent years when interviews became part of company hiring routine, the interviewer himself often didn't know where to begin, where to end, or what questions to ask in between. Once he had a few facts in front of him, sometimes unrelated and irrelevant, he didn't know what to do with them or how to interpret them. The interview was also undoubtedly dominated by the interviewer's own peculiar personal likes and superstitions that could prevent him from hiring the best man for the job.

Patterned Interviews Are Solution

One method used by some textile mills to overcome these hazards has been developed by a number of management-consulting firms. The interviewing method, known as the patterned, guided, or controlled interview, gets away from the guesswork and inaccuracies of interviewing. This kind of interview is based on the fundamental assumption that people rarely change. If you want the best possible chance of predicting what a prospective employee will do in the future, go over his past with a fine-toothed comb. That is exactly what the controlled interview is designed to do.

The controlled or patterned interview as devised by Robert N. McMurry & Co., Chicago, Ill., is actually a good substitute for a long and close friendship with the job applicant. It provides a thorough review of the individual's whole life history under the following general headings: his previous job experience and attitudes, his schooling and school adjustment, his early home background, his financial condition, his domestic and social situation, and his health record.

In addition to giving the interviewer specific questions to use in guiding the conversation, the patterned-interview form also provides reminders to the interviewer to get complete and meaningful information. For example, one of the questions asks about his reasons for leaving his last job, and under the space for recording the answer this reminder appears in small red type—"Are his reasons for leaving reasonable and consistent?" Another question has to do with his extracurricular ac-

tivities while in school, and here the interviewer is reminded, "Does he get along well with others?"

Several of these patterned-interview forms are shown in the accompanying illustrations. Every aspect of the individual's background is fully explored. If an interviewer is friendly, yet matter-of-fact in his approach, he can obtain an amazingly complete picture of the applicant.

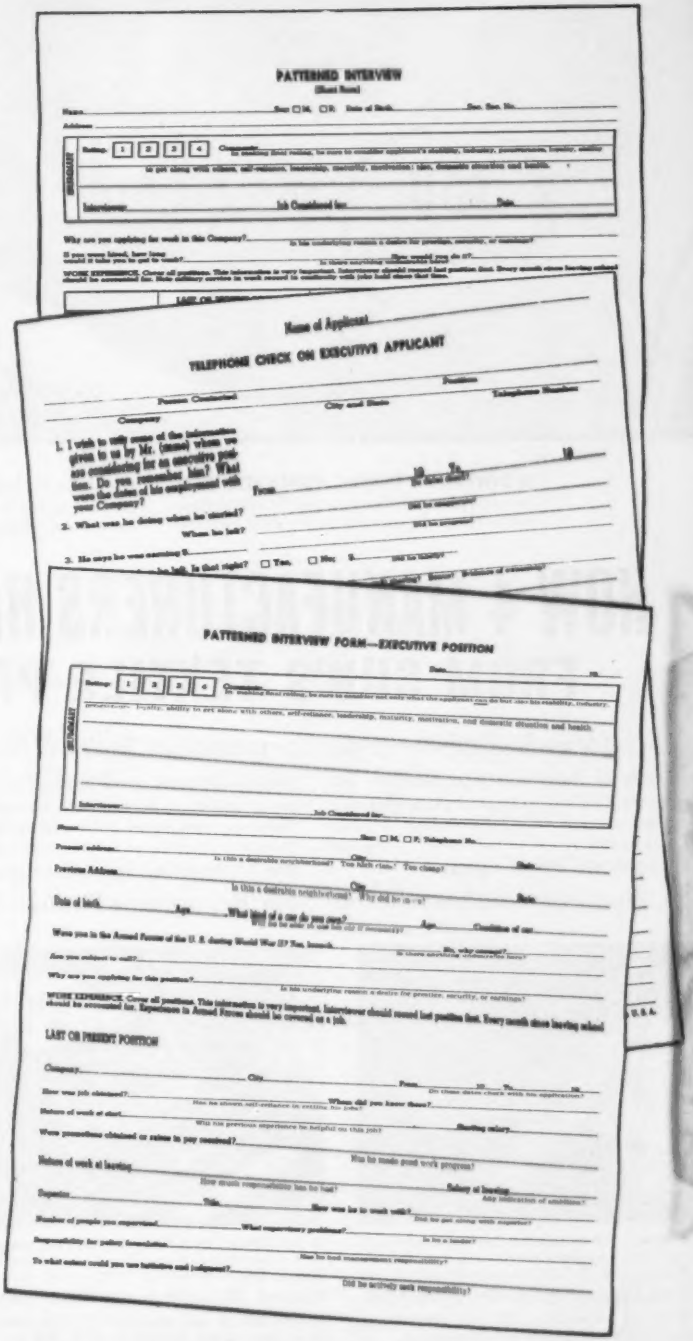
But probably most interesting and important is the interpretation of this information. The basic theory, which is well-founded in psychological and psychiatric thinking, is that people do not change very much. Early in life each individual develops certain habitual ways of doing things, and once these habits are formed they are almost never changed. The young man who constantly shifts his interests from one activity to another and who never sticks with anything for a reasonable period of time is not likely suddenly to get a job and stay on it for ten years. Stability of interests is not one of his habits. On the other hand, this same young man may have a long history of getting along well with people—he has taken part in many group activities and enjoys being with others. The likelihood that he will suddenly change to a grouch, a trouble-maker in groups, or a "hermit" is very slim. He has the habit of getting along well with others.

In other words, the key to predicting what a job applicant will do in the future is to take a careful look at what he has done in the past. The thorough review of a man's life history enables the interviewer to determine whether the man has such habits as stability, industry, perseverance, self-reliance, ability to get along with others, loyalty, and leadership. Then, because these basic habits rarely change, the interviewer can predict the applicant's future performance with surprising accuracy.

The McMurry company has developed employment-application and patterned-interview forms for the hiring of executive, sales, clerical, and plant personnel. It has also designed telephone check forms for use in verifying applicants' previous employment and school records.

A major advantage of this selection program is that, despite its thoroughness and its use of important psychological principles, the interviewers need not be trained psychologists. Anyone who is above average in intelligence and who is reasonably well adjusted can become a competent patterned interviewer after only a few days of training. Once the interviewer learns how to get all the facts and in-

(Continued on page 236)


PATTERNED INTERVIEW

TELEPHONE CHECK ON EXECUTIVE APPLICANT

PATTERNED INTERVIEW FORM—EXECUTIVE POSITION

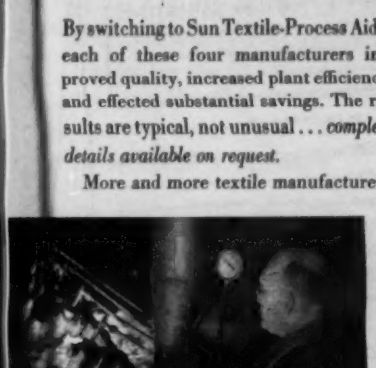
***PATTERNED-INTERVIEWING FORMS** have pertinent questions in small type under the space provided for the answer to each question. Use of these small-type questions helps interviewer to interpret replies in light of requirements of job. Interviewer's ability to interpret facts obtained is as important as getting facts themselves.*

A SYNTHETIC FABRIC MANUFACTURER saved 25 percent on formula costs by substituting a Sun Textile-Process Aid for the three competitive oils he had been using. In addition to saving time and money, he has attained a great improvement in smoothness and penetration of the size.

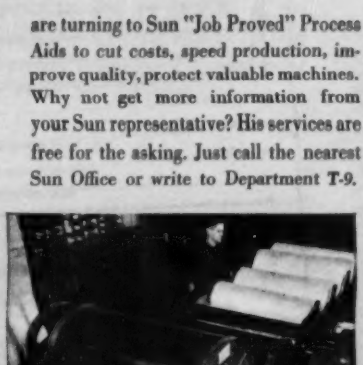
HOW 4 MANUFACTURERS HAVE BENEFITED FROM SUN'S TEXTILE-PROCESS AIDS

By switching to Sun Textile-Process Aids, each of these four manufacturers improved quality, increased plant efficiency and effected substantial savings. The results are typical, not unusual . . . *complete details available on request.*

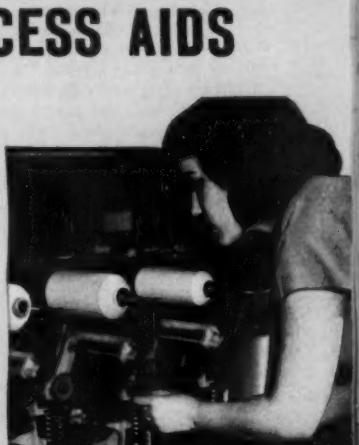
More and more textile manufacturers are turning to Sun "Job Proved" Process Aids to cut costs, speed production, improve quality, protect valuable machines. Why not get more information from your Sun representative? His services are free for the asking. Just call the nearest Sun Office or write to Department T-9.



A WOOL PROCESSOR increased his yield 3 percent when he changed to a Sun Textile-Process Aid. It improved the quality of his finished product, and speeded up production by saving preparation time and penetrating the wool fibers quickly and thoroughly.



A COTTON FABRIC MANUFACTURER ended his corrosion troubles by switching to a Sun Textile-Process Aid. At the same time he improved the quality of his fabrics, speeded up production, and widened the profit margin. In oil costs alone, he now saves $1,000 a year.



A NYLON THROWSTER found that a Sun Textile-Process Aid gave better lubrication and protection to the sized thread. It reduced breakage and also eliminated preferential pickup. Along with economies in production, he has lowered his oil costs substantially.

SUN INDUSTRIAL PRODUCTS

SUN OIL COMPANY, PHILADELPHIA 3, PA. SUN OIL COMPANY, LTD., TORONTO AND MONTREAL

SUNOCO®

CARD-TENDER TASKS

Machines per tender, 22 — Total machines, 110

Job task	Standard time (min.)	Frequency (8 hr.)	Total time per machine (min.)	Tenders required per 110 machines
Women				
Cleaning	0.55	2	1.10	0.32
Sweeping	0.43	2	0.86	0.25
Oiling	1.20	1	1.20	0.34
Remove flat strips	0.24	3	0.72	0.21
Remove fly waste	0.65	1	0.65	0.19
Piecing up and patrol	0.24	8	1.92	0.55
Doffing	0.40	8	3.20	0.92
Totals			9.55	2.78
Men				
Rack lap	0.42	2	0.84	0.24
Creel lap	0.45	2	0.90	0.26
Strip cards	1.02	2	2.04	0.59
Assist in stripping	1.02	2	2.04	0.59
Assist in stripping	1.02	2	2.04	0.59
Totals			7.86	2.27

Summary	Women	Men
Total tenders required	2.78	2.27
Machines per tender	39.60	48.40
Minutes worked in 8 hr.	382.00	380.00
Percentage of time worked	79.60	79.20
Standard job load (% of 8 hr.)	80.00	80.00

Total time each task (one machine) = Standard time × frequency

$$\text{Tenders required} = \frac{\text{Total time} \times \text{number of machines}}{\text{384 min. (standard 80\% load)}}$$

Machines per tender = Total machines ÷ tenders required

Minutes worked = Machines per tender × total time per machine

$$\text{Percentage of time worked} = \frac{\text{Minutes worked}}{\text{Minutes in 8 hr. (480)}}$$

Women on CARD-TENDER Tasks

▶ ***Right now, there's plenty of male help, but the labor pool is dwindling. Here's how a New England cotton mill plans to use more women on cards if a critical man shortage comes.***

By E. H. HELLIWELL, *New England Editor, TEXTILE WORLD*

A FAR-SIGHTED mill man recently sent out orders to his department heads for a list of all men's jobs in their departments that could be filled wholly or partly by female workers. The jobs were to be split up into tasks that could be done by women and tasks that have to be done by men.

Here is an example of how the job breakdowns were handled.

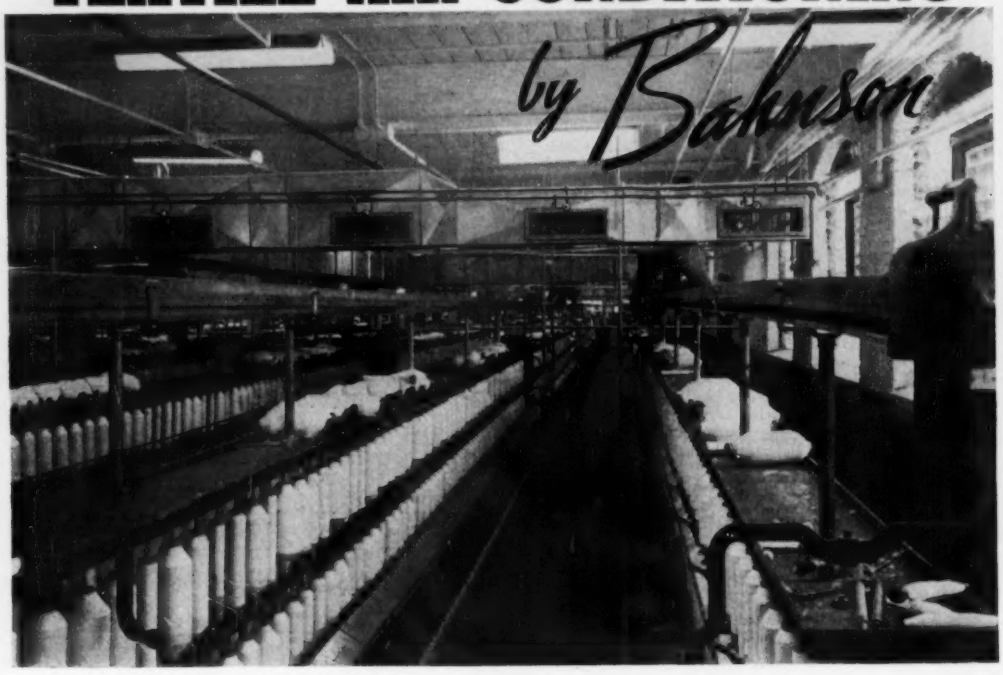
Card tenders in this mill are doing all the tasks connected with their jobs —including oiling, sweeping, stripping, racking laps, and removing fly. Each man runs 22 cards, and there are five tenders—making a total of 110 cards.

As the accompanying breakdown shows, no change was made in the total job load nor in the number of workers used on the 110 cards. The task assignments came out at 2.78 men and 2.27 women instead of the present 5 men and no women.

In this case, the card-tender's job had already been thoroughly time-studied. All that the card-room overseer had to do was get out his records and do a little paper work.

This method was followed by all departments. Now the mill has an accurate picture of just what can be done if it has to use women on some of its jobs now done by men.

TEXTILE AIR CONDITIONING



A Bahnson Central Station air conditioning system with REFRIGERATION and including Bahnson pneumatic atomizers maintains year 'round humidity and temperature control in this basement cotton spinning room; but—whether processing natural or synthetic fibre, Bahnson engineers will study your particular requirements and recommend the Bahnson system best suited to your needs...

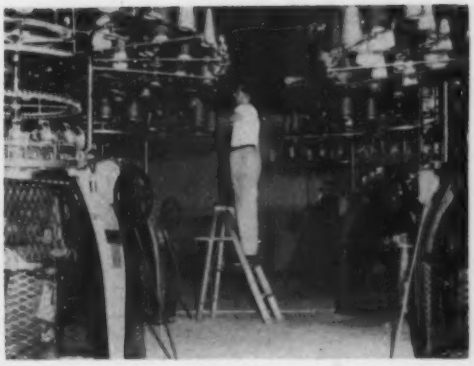
ATOMIZER HUMIDIFICATION SYSTEM
CENTRIFUGAL HUMIDIFIER SYSTEM
AIR VITALIZER SYSTEM
HUMIDUCT UNIT SYSTEM
CENTRAL STATION AIR WASHER SYSTEM
CENTRISPRAY AIR WASHER SYSTEM

Bahnson engineering is based on 40 years experience in textile air conditioning and Bahnson equipment assures maximum efficiency at minimum cost.

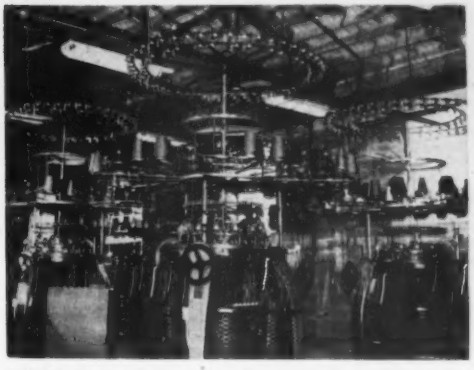
Bahnson Company
ENGINEERS AND MANUFACTURERS
WINSTON-SALEM, N. C.

For more information, write direct or use Reader Service post card.

KNITTERS AND MECHANICS have plenty of room to work around these Supreme machines. Mr. Levy is shown as he works from a portable work bench.



THE MACHINES are placed so that there are 24 in. between yarn racks. This space leaves ample room for a knitter to use a step ladder around the machines.



CEILING FANS are placed over each machine. Each fan runs for about 1 min. before a roll is cut off to blow lint off the top stop motions and cones.

YARN AND FABRICS are stored on wooden platforms that are light and small enough to be moved by hand. The plant is laid out to provide marked storage areas.

Efficient PLANT LAYOUT
Pays Off for Small Knitting Mill

▶ Maybe you haven't paid enough attention to layout if you have a small plant. If so, you should start doing something about it. An efficient layout can cut your costs and up your production. It did for this mill. Check the principles of your layout with these that Lawrence Knitting Mills, Charlotte, N. C., uses.

By LAWRENCE LEVY, *President, Lawrence Knitting Mills*

AN EFFICIENT LAYOUT is necessary for a small knitting plant to cut down the cost of production. Materials are handled fewer times, receiving and shipping are speeded up, and knitters have an opportunity to increase their production.

Some small knitting mills believe that only large mills would benefit from a revised plant layout. Other mills may find it difficult to revise their layouts because of lack of space. Whether a mill is large or small, an efficient plant layout will pay off in many ways.

A good opportunity to revise a plant layout is when business is slow or if a mill is going to move to another location. This opportunity presented itself recently when we moved from Bessemer City into a new one-story building in Charlotte.

(Continued on page 286)

BECKMAN—*the leading name in pH—presents another important advancement in instrumentation*

Announcing The BECKMAN MODEL N pH METER

Completely Portable!

Extremely Compact!

. . . and Really Rugged!

In the constantly expanding field of pH, there is wide demand for a *completely portable* battery-operated pH instrument that is low in price, light in weight, compact in size, and amply rugged to be used anywhere—in the orchard, in the oilfields, in textile mills, plating shops, mining and mill operations, food processing plants, laboratories . . . *anywhere*, without dependence upon outside power circuits.

The newly developed Beckman Model N pH Meter not only meets all these requirements, but also many more. Here are the highlights. Check them over. *Never before have unique advantages like these been combined into a single pH instrument!*

OPERATING SIMPLICITY AND ACCURACY . . .

- Accuracy to better than 0.05 pH.
- Low operating cost—less than 2c per hour.
- Built-in temperature compensation—0° to 100° C.
- Fast warm-up—less than 10 seconds.
- "Check Pointer" eliminates need for frequent buffer standardization.
- Batteries are easily checked with the regular panel controls—no need to disassemble the instrument. Clip-mounting of batteries eliminates need for soldering or wiring.

NEW COMPACTNESS AND RUGGEDNESS . . .

- All-metal case—cast aluminum with baked enamel finish to resist wear and corrosion.
- Splash-proof design—fully desiccated internally.
- Shock-proof—each tube is individually shock-mounted.
- Light weight—less than 8 lbs., complete.
- Small, compact—only 4" x 6" x 9½" overall.
- Equipped with the new Beckman Red Label Glass Electrode—virtually unbreakable, covers almost the entire pH range, usable from freezing to boiling.
- By far the most rugged overall construction of any pH meter.

GET ALL THE FACTS on this newest Beckman advancement in pH by contacting your nearest authorized Beckman instrument dealer. Or write direct!

BECKMAN INSTRUMENTS

SOUTH PASADENA 12 CALIFORNIA

Factory Service Branches: Chicago — New York — Los Angeles

Beckman Instruments include: pH Meters and Electrodes — Spectrophotometers — Automatic Titrators — Radioactivity Meters — and Special Instruments

NEW **CONVENIENCE SIMPLICITY RUGGEDNESS**

make the Beckman Model N a noteworthy advancement. The following features are typical . . .

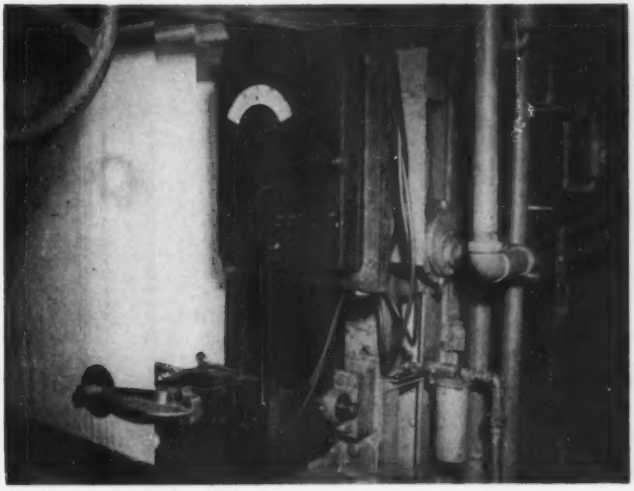
ELECTRODE SUPPORT ROTATES alongside case for maximum convenience in carrying. Instrument can be used in either horizontal position (shown at left) or vertical position (above)—whichever is handier.

CONVENIENT CONTROLS not only centralize all operating functions, but also permit checking amplifier circuits and battery condition without opening case or disturbing battery connections.

RUGGED, COMPACT DESIGN withstands rough field and plant service with negligible maintenance. Solid cast-aluminum case is strong, yet light in weight. Beckman Glass Electrode is virtually unbreakable!

There are many other important features designed into the Model N. Be sure to get the *complete* story on this new Beckman development!

MOISTURE CONTROLLER Reduces Tenter Costs, Increases Production



CONNECTING THE INSTRUMENT was easy. The main control box and electrodes were attached and the two plugged into the lighting circuit.

▶ ***A prominent textile-finishing plant put in an electronic moisture detector-controller. The results:***

An increase in production of 20% and less overtime

Steam consumption reduced 43%—saved $17 per week

Power costs cut 34%—saved $5.80 per machine per week

Better finish, better hand, more uniform width

Investment paid off in under 6 mo.

SOME TIME AGO we were approached by a firm offering a moisture control instrument for use on tenters, dry cans, and other equipment. The plea made for this electronic device was that it would help us increase production and improve the finish of our goods.

We process a wide variety of fabrics, including cottons, spun rayons, and blends of cotton and viscose. The constructions include piques, nainsooks, chambrays, broadcloths, and waffles.

We installed this equipment with reservations in our minds. But its performance exceeded our expectations.

Production Increased 20%

We tested out the electronic equipment on one of our tenters. The device used is a Drimeter manufactured by Fielden Instrument Corp. Philadelphia, Pa.

Installing the equipment was easy. The control instrument was put on a shelf. The electrodes were attached to a movable arm on the tenter. The two were connected and plugged into our lighting circuit—and we were ready for the test!

We decided to bring the goods off at 5% moisture content, as shown by the meter. An analysis of the fabric being run showed that the quality was enhanced and that our production was also increased. So we decided to equip all of our frames with Drimeters.

The human factor was eliminated. Aware of the many troubles caused by bringing goods off a drying machine too damp, operators lean backward to be sure that the goods are dry enough. The workers' hands become acutely sensitive to moisture, and, as cloth with normal regain feels damp when hot, the net result is that they almost always bring the goods off the frame bone dry.

This has several unfortunate results: First, it slows down production because the dryer is run slowly enough to have every particle of moisture expelled from the goods. Bringing the goods off with the normal regain of 5%, 6%, or 8% will result in running the machine faster. Second, bone-drying goods certainly does not benefit the finish.

With a setting of 5% moisture content on all the tenters, we were able to increase our daily production by 20,000 yd.

Of course, our production varies considerably. On some days there is no need for added production. We used to operate two shifts on our tenters, one shift running overtime almost continually. The advantage to us is that the Drimeter cut down the amount of overtime.

Investment Amortized in Under 6 Mo.

The savings were noteworthy. The following figures were taken from the original trial installation. Steam consumption was reduced 43%; electricity for the blowers, which were turned off to increase moisture content, was reduced 34%. At a steam cost of 60¢ per thousand pounds, this meant savings of $17.00 weekly per shift. Our power costs were quite low, 1.1¢ per kw.-hr, which meant a weekly saving of $5.80 per machine per shift —or approximately $6,000 a year savings for the machines on an outlay of less than $2,500. We know of very few items of equipment that will pay for themselves as quickly as this.

Softer, Better Hand Obtained

There were numerous benefits from the standpoint of quality. We have long been known for our beautiful blue whites. We have realized that we could increase the speed of drying by raising the temperature, but we questioned the effect on the finish of such elevated temperatures.

We have found that the Drimeter permitted us to leave sufficient moisture in the goods to act as a "cushion" against high temperatures. In other words, we know that the cloth temperature will not exceed 220° F. if we leave 5 to 6% moisture in it. Drying capacity has been increased and blue whites are not affected.

(*Continued on page 282*)

Based on information supplied by a prominent mill man.

PRECISION *products*

for

RAYON

ACETATE

NYLON

COTTON

WOOL

PYROTEX

For scouring and dyeing Wool, Worsted, Cotton, Acetate, Rayon and Nylon. Neutral, effective under acid, alkaline and hard water conditions.

STANTEOSINE

Substantive softener for Acetate, Rayon, Cotton, Worsted, Wool. Minimum effect on shade and light fastness of dyed fabrics.

SOLIDINA

For improving fastness to washing and crocking of direct colors.

MOYTOL

Penetrant for dyeing, fulling, carbonizing, mercerizing, finishing and sizing. Effective in acid, alkaline and salt solutions.

STANTEX* OILS *for* YARNS AND STAPLE

Suitable for all fibers in coning, winding, twisting, spinning, weaving, knitting, etc. Characterized by high lubricity, excellent stability and scourability and good anti-static properties.

RETARDINE*

For level dyeing and stripping of vat sulfur and direct colors.

STANTEX* PENETRATORS

For fast, efficient wetting and surface reducing action in dyeing and finishing of all yarns and fabrics.

SANFOROLS

For efficient wetting and rewetting and softening properties in preshrinking processes. No gumming of shoes or odor development.

STANDAPOLS*

Quality sulfonated oils for finishing, softening, throwing, sizing and emulsifying; anti-static agents.

STANDAFINS

Durable and semi durable finishes imparting a full range of body, hand and drape to all fabrics; non-slip finishes; snag resistant finish for hosiery; ribbon finish.

STANDARD CHEMICAL PRODUCTS, Inc.

1301 JEFFERSON STREET, HOBOKEN, NEW JERSEY

Chattanooga, Tenn. • Paterson, N. J. • Providence, R. I. • Sunbury, Pa. •
Sacramento, Calif. • Greensboro, N. C. • Leaksville, N. C. • Salisbury, N. C.

* Reg. U. S. Pat. Off.

FULTON BAG'S NEW OPENING ROOM was planned with definite objectives in mind. These objectives included plenty of bale lay-down room, uncluttered working areas, filtered air, humidification, good lighting, and good blending and cleaning. Relative humidity of 50% is maintained by 65 atomizers.

Fulton Bag Wanted
A *Modern* Opening Room

▶ *Must opening-room working conditions be bad? Fulton Bag & Cotton Mills thought not. So they—*

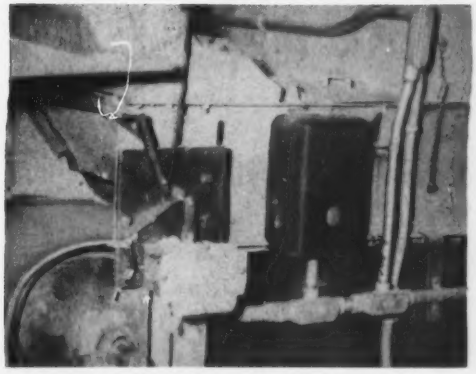
- *Moved opening into a roomy, well-lit area*
- *Installed new machinery, with plenty of blenders*
- *Put in humidifiers and humidity controls*
- *Cut out dust by filtering opening-room air*
- Put in automatic controls to confine fires

By E. DALTON WHITE, *McGraw-Hill Atlanta Bureau*

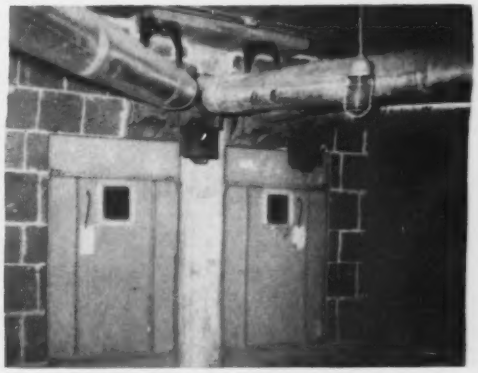
FULTON BAG & COTTON MILLS, Atlanta, Ga., is right in the middle of a large-scale modernization program. Studies are being made, plans completed, and installations of new machinery started up.

Right now, Fulton Bag is a good example of far-sighted development and change. Its new opening room, just completed, is a model for working conditions and for good blending and cleaning.

The opening lines are housed in a



FIRES IN THE OPENING ROOM are kept out of the picker room by a photoelectric cell. Fire causes the cell to close a damper that keeps cotton out of the suction pipe.



FILTER CELLS in the basement receive dusty air and filter it. Dust stays in the cells; air returns to the room. Drop on air-pressure gauge indicates that the cells need cleaning.

BRINTON

MODEL MULTIPLEX

STYLE 846-SD

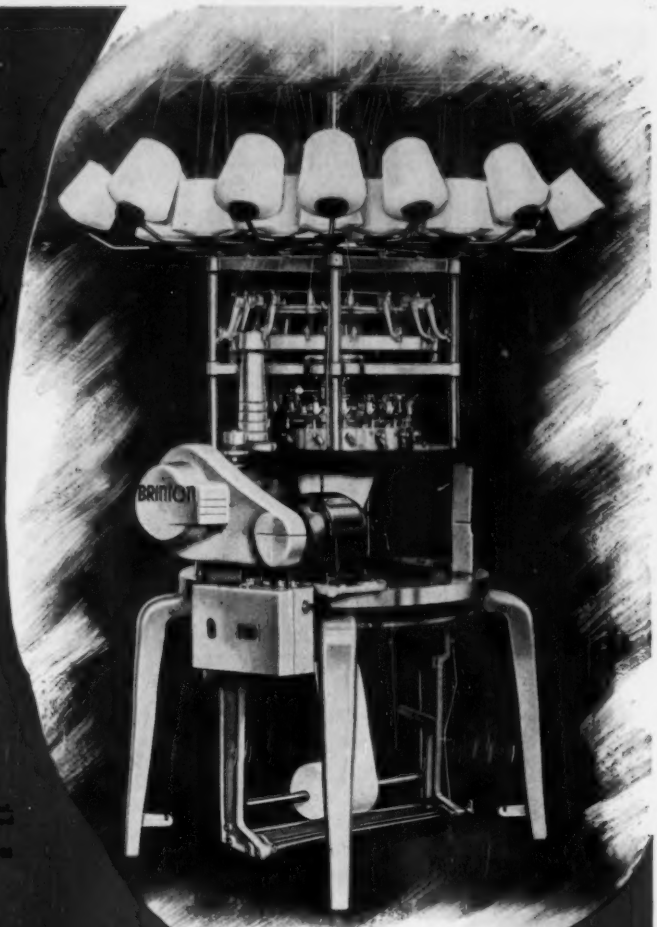
Knitting Machine of the Mid-Century

BRINTON'S NEW DESIGN FOR BETTER PRODUCTION

Engineered features of Model Multiplex are:

- **Stationary Bobbin Table** provides continuous production by use of 16 tie yarns.
- **Positive Electric Magnetic Clutch and Brake** work in conjunction with individual motor drive, result streamlined construction that provides ultra-efficient operation and pleasure eye appeal. Magnetic Clutch and Brake involves self-contained panel for current operations. Positively instantaneous function of all step-motion facilities.
- **Mechanical Hand Wheel.** Positions with amazing ease. Saves time and years. Allows operator to move cylinder and dial needle by needle without effort.
- **Two Jog Control Buttons,** on opposite sides of machine, permit operator to move cylinder and dial as little as 1 needle at a time.
- **Super Duplex Construction** ensures elimination of fabric lines.
- **Any Combination of Feeds** from one up to a full 16 as a 16 inch, 16 feed course by a turn of a knob using features of the knee control in conjunction with swing cams on cylinder and dial construction.
- **Colorful Appearance,** a colorful blend of bright green and rich red, provides greater safety and efficiency and reduces fatigue.
- **Two Micrometric Control Adjustments** for raising and lowering the dial top ring and the same precision adjustment in setting the relationship between the cylinder and dial race which is important in producing higher quality fabrics.
- **Reliable Feed Protection** with spare and connections for putting on presser-fly.
- **Great Saving of Floor Space.**
- **Production** is an astounding 35 revs-per-hour on 14 cut model.

Model MULTIPLEX is available in diameters from 9" to 24", 8 to 20 feeds.



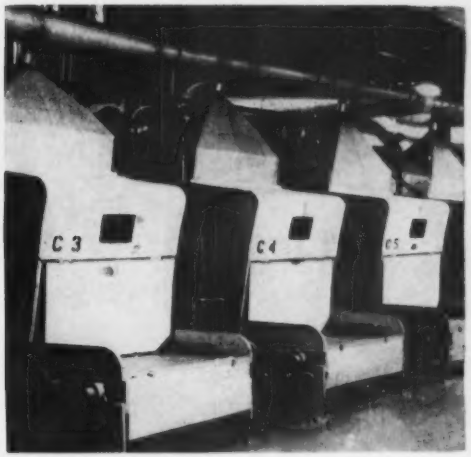
In this, the Machine [illegible] the most advanced engineering techniques are combined with the ideas of the modern industrial designer. Here is a completely new conception of the large diameter knitting machine.

Brinton research, craftsmanship and six decades of knowhow worked to produce a machine that gives higher production and better quality at lower cost. Model MULTIPLEX is an engineering achievement, a machine with more features, greater advantages and mechanical advancements.

BRINTON

CIRCULAR KNITTING MACHINES

KENSINGTON AVE. & B ST., PHILA. 24, PA., U.S.A.



54 BLENDING FEEDERS arranged in six lines supply 19 pickers. Hoods and swinging doors enclose the feed aprons. Ducts from the hoods remove dust by suction.

REWORKABLE WASTE is returned to the opening room by air. The ceiling condenser shown here collects the waste and drops it into the waste box below.

well-lighted room of about 22,500 sq. ft. Plenty of room was left for later expansion. This room replaced the two cramped rooms formerly used.

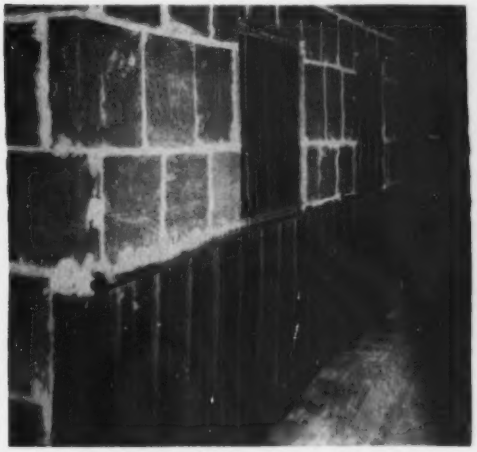
Unusually wide alleys were left between the lines of machinery, and all piping was hung from the ceiling. There's plenty of room and plenty of blending feeders to take care of the range of cotton mixes run by Fulton. In the line, the feeders are close together to reduce the walking done by the operators.

Probably the three other outstanding features of the new set-up are (1) fire protection, (2) humidification, and (3) filtered air.

Chokes have caused more opening-room fires at Fulton than sparking tramp metal. Precautions against friction fires include a water sprinkler system; a photoelectric cell that cuts off burning cotton from the picker room; and a good program of inspection, oiling, and maintenance.

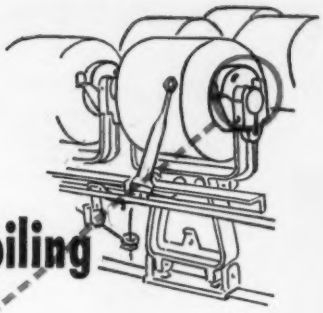
The humidification system consists of 65 spray nozzles controlled to maintain 50% r.h. The biggest advantages to humidification in the opening rooms are worker comfort and level humidity, regardless of outside conditions.

Filtered air contributes more to working conditions than any other of Fulton's improvements. Thirty filter rooms, 13.5x6 ft., clean the air of lint and dust and return the air to the opening room. The return ducts have smoke detectors and automatic shutters. If a flash fire occurs in the dusty filter room, a photoelectric cell causes the shutter to the opening room to close. Shutters to the outside open, and the smoke and air from the filter room are blown out.

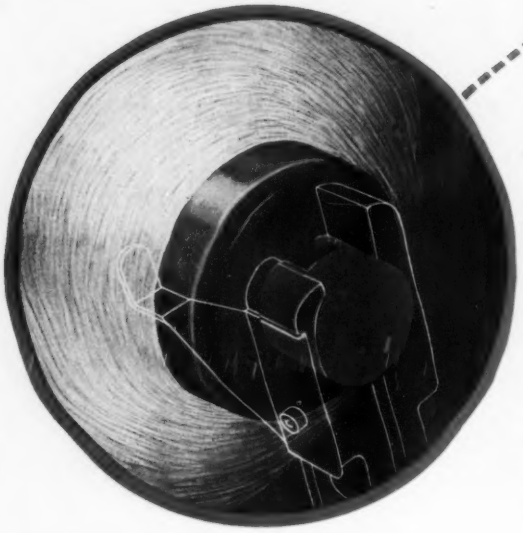


AIR LOUVERS at the top of the cell wall on the opening-room-floor level return filtered air to the room. Louvers are built in the hollow-tile cell wall.

DUST AND LINT are removed from the cell by this suction pipe. Tags of dusty lint hanging on the Fiberglas filter units will drop off when the filter frame is bumped lightly.



Nylon plastic bearings need no oiling



Nylon bearings molded by Franklin Plastics Div., Robinson Industries, Inc., Franklin, Penna.

... prevent yarn contamination ... cut maintenance costs

Before standardizing on Du Pont nylon plastic, U. S. Textile Machine Co. used three other materials for the take-up roll bearings of their U. S. Acme Face Drive Twister. Each of the three had the same bugaboo: if they were oiled, the oil splattered on the yarn. If they weren't, the bearings wore and threw abraded particles into the yarn.

Then nylon plastic was tried. In field tests it showed no sign of wear after the equivalent of two years' running. And not a drop of lubricant was used. Nylon's unique bearing characteristics made it unnecessary.

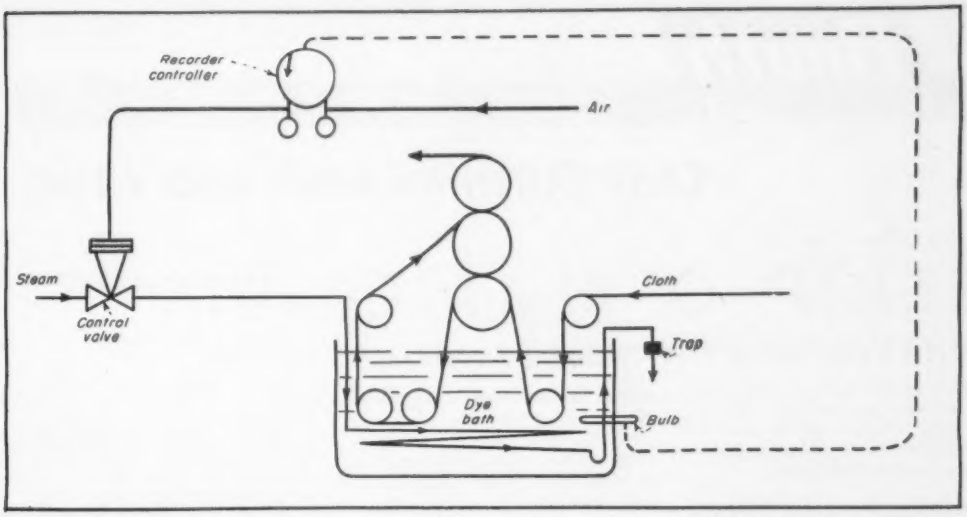
In a year's time this nylon bearing means quite a saving to the throwster. In addition to the all-important prevention of contamination to yarn, it eliminates the time-consuming job of oiling bearings. There's less cleaning to do, fewer bearing replacements and, naturally, less machine down-time.

This combination of performance and economy is typical of the job that molded Du Pont nylon does on a lot of standard mill equipment. For example: flyer blocks, bolsters, cap bars, and thread guides.

Demand for nylon currently exceeds supply. However, we suggest you investigate its versatile properties for future application. We will gladly discuss the availability of quantities for development work. For additional information on nylon and other Du Pont plastics, write:

E. I. du Pont de Nemours & Company (Inc.)
Polychemicals Department, District Offices:
350 Fifth Avenue, New York 1, New York
7 S. Dearborn St., Chicago 3, Illinois
845 E. 60 St., Los Angeles 1, California

DU PONT
REG. U. S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY
Polychemicals
DEPARTMENT
PLASTICS • CHEMICALS



CONTINUOUS-DYEING CONTROLS may even include an elapsed-time recorder-controller hooked up in this manner.

Study Your Control Instruments For Best DYEHOUSE Service

- *A practical dyehouse man should understand the various kinds of control instruments available to him.*
- *He should know what degrees of control he needs so that he can have the right size control valve installed.*
- *Once the principle behind the various instruments are understood, maintenance is easier.*

By LEO WALTER

THE CHOICE OF TYPE OF dyehouse instrumentation—whether self-actuating, electrical, pneumatic, or hydraulic—depends (1) on process characteristics like time lag, storage volume, and required degree of accuracy, (2) on individual plant working conditions, and (3) on the plant layout itself.

The deciding factor in one's choice of controller type should be reliability.

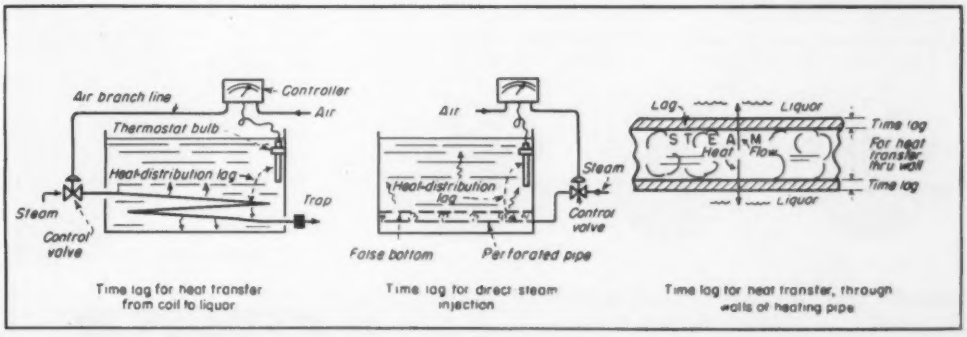


Fig. 1. LAG IN HEAT DISTRIBUTION and transfer occurs in A between heating coils and the thermostat bulb, in B between the direct-steam-injection pipe and the thermostat bulb, and in C between the inside and outside of a heating pipe itself.

Booth

Originators of STRIP-O-MATIC *

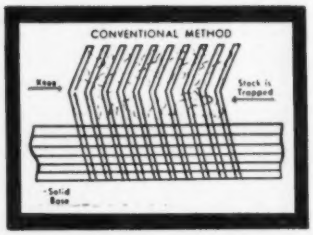
CARD CLOTHING NEWS AND VIEWS

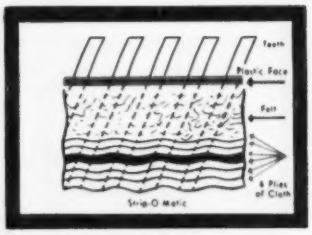
Here's Why

STRIP-O-MATIC

RUNS VIRTUALLY WITHOUT STRIPPING

—why it saves in stripping waste, saves in down time, lasts longer and cards better. There is nothing new for your help to learn; Strip-O-Matic provides actual savings in time, labor and money.





Cards With a "Combing" Action

The streamlined wire shape of Strip-O-Matic which permits more transverse points at the same time that it eliminates longitudinal points, leaves more open space between the teeth. The fibres being carded are pulled past the wires in a gentle "combing" action. When fibres are intertwined around numerous teeth closely set, or carried on the points of teeth for the same reason, there is much more chance for fibre damage than with the open spaces provided by Strip-O-Matic.

Resiliency Plus Strength

The teeth of Strip-O-Matic will neither lose their pitch nor bend backwards. The very shape of the wire makes them extra strong. The foundation provides the necessary resiliency to prevent tearing or other fibre damage. Stock trapping and therefore stripping, is virtually eliminated by the open construction of STRIP-O-MATIC. The new face is oil and water proof permitting the use of emulsions containing oil, water or both.

Less Grinding is Required with Strip-O-Matic—

because each individual tooth is sturdier and more of the carding takes place on the shank of the tooth instead of the points.

These features make Strip-O-Matic your one best buy in card clothing. Consult a Benjamin Booth representative or write today to Benjamin Booth Company, Dept. TW1 and learn what your savings can be.

WHAT STRIP-O-MATIC USERS SAY

"Considerably Less Shrinkage with Strip-O-Matic"

I have reported to you often on the performance of Strip-O-Matic, now I'd like to have you read just what Mr. Paul Benninghofen of Shuler & Benninghofen, manufacturers of Papermakers Felt Jackets in Hamilton, Ohio recently wrote to a friend in another mill:

"Acknowledging your letter of Dec. 13th, the first breaker on one of our card sets is equipped with Strip-O-Matic card clothing. It has been in service about 3 months.

"We are sold on this type of card clothing. We find the shrinkage is much less, the production is much higher, the yarn is much better quality. "When we equipped this particular first breaker with this card clothing, we needed only a new cylinder. However, in order to give it a fair trial, we also re-equipped workers and strippers. The doffer, however, was not changed.

"We find the use of this card clothing enables us to strip the cards much easier. We use a vacuum stripper and it works to much better advantage on card clothing of this type.

"As our card clothing needs replacing, we intend to use Strip-O-Matic.

"Yours very truly,
SHULER & BENNINGHOFEN
Paul Benning[illegible]"

This letter is typical [illegible] the many pleased us[illegible] We sincerely believe [illegible] too, [illegible] find Strip-O-[illegible] gives [illegible] ing at mu[illegible] cost.

A bookle[illegible] presenting [illegible] esting and [illegible] asking. Write toda[illegible] Company, Dept. TW[illegible] start yo[illegible] ings i[illegible]

[illegible]

E. Alle[illegible]

Benjamin Booth Comp[illegible]

REMEMBER BOOTH FOR QUALITY CARD CLOTHING OF ALL KINDS
PRODUCERS SINCE 1892

BENJAMIN BOOTH COMPANY, ALLEGHENY AVENUE & JANNEY STREET,
PHILADELPHIA 34, PA.

Booth

For example, in locations where electricity might fail, self-actuating regulators are desirable. Where highest accuracy is required, pneumatic or hydraulic regulators should be used. When medium accuracy is allowable, electrically operated regulators are useful. Where thermometers are already installed, non-indicating regulators should be used.

For larger plants, where permanent instrument records are kept on file, recorder controls should be considered for the longer-term evaluation, not only of temperatures but also even of working conditions in the dyehouse.

It should be kept in mind that when an automatic control is installed, the operator should not rely blindly on it performance. Failure of control does happen upon occasion and causes damage in processing. Independent alarm signals are therefore recommended in many cases.

Factors to consider in studying control instrumentation closely include:

1. PROCESS-TIME LAGS. It is obvious that heat input must satisfy the constant demand for heat if the process temperature is to be kept steady. This is a heat-flow process.

With the direct steam-injection method, heat is blown in with the steam and is dissipated throughout the liquor. It has to penetrate together with the liquor into the fibers of the fabric or yarn, which takes some time.

When a coil is used, some resistance to heat flow is also present, because heat must penetrate through the walls of the coil to reach its outer surface. It is then dissipated in the usual manner. A coil adds, therefore, some delay in performance.

It is also obvious that the bigger the vessel, the more time will be needed for distribution of heat throughout the liquor. If a thermostat bulb is located somewhere in a big vessel, it will take some time before a change of rate of steam flow through the coil becomes noticeable by the thermostat.

All these delays are process-time lags, and their presence and amount determine largely the type of control that should be adopted. Fig. 1 shows a few typical process lags and controller lags simultaneously encountered.

Distribution lag depends not only on the size and shape of vessel, but also on movement of the liquid. The lag obviously becomes smaller when the liquor is vigorously stirred, either mechanically or by pump circulation. In general, a process will be better controlled if some means for this agitation are present.

(Continued on page 290)

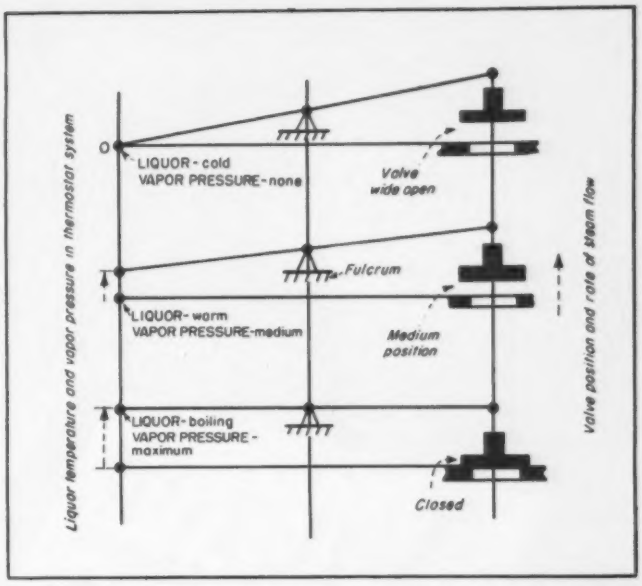


*Fig. 2. **PROPORTIONAL CONTROL** regulates the valve opening (right top, middle, and bottom) in accordance with the exact temperature of the bath (left top, middle, and bottom).*

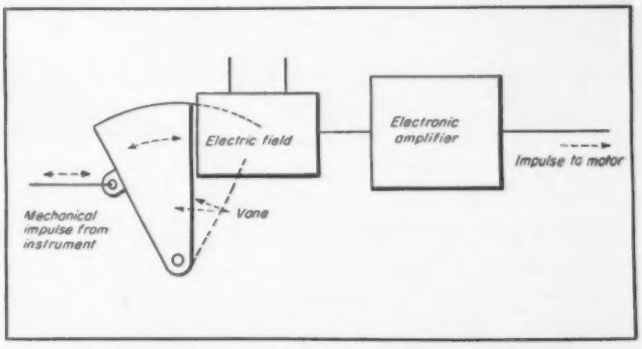


*Fig. 3. **ELECTRONIC CONTROL** eliminates controller time lags by instantaneous action. A mere variation in the electric field, electronically amplified, provides powerful control action.*

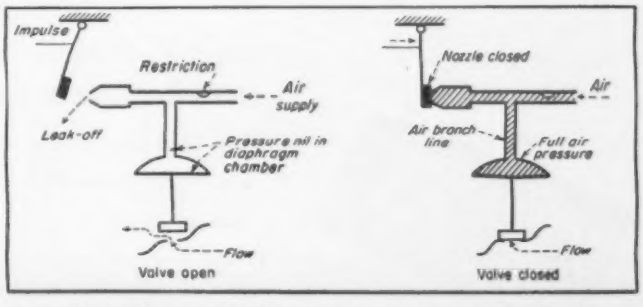


*Fig. 4—**PNEUMATIC-VALVE CONTROL** works when a drop in air pressure releases pressure in the diaphragm and causes the valve to open, or when full air pressure in the air branch line causes the diaphragm to bulge and to close the valve.*

Always Uniform

Unvarying quality never just happens . . . in matches or starch. The reputation for dependability of Victor Mill Starch is protected every step of the way . . . from formula to finished product.

That's why Victor has long been called "The Weaver's Friend" in mills known for high production.

For good penetration, strong warps, less shedding . . . rely on Victor Mill and the trusted Keever man who serves you.

TEXTILE SALES DIVISION
1200 WOODSIDE BUILDING
GREENVILLE, SOUTH CAROLINA
Charles C. Switzer, Manager

THE KEEVER STARCH CO. ★ GENERAL OFFICES ★ COLUMBUS 15, OHIO

Corn, wheat and other grain products for industry since 1898

DOFFING COST

32s cotton yarn; 10,000-rpm. spindle; 132-rpm. front roll; 252 spindles per frame

WOODEN BOBBINS	ADAPTER SPINDLES
8-in. bobbin, 1 7/8-in. ring	9-in. tube, 2-in. ring
3,900 yd. per bobbin	6,500 yd. per bobbin
6-hr. doff	10-hr. doff
24 frames per doffer	37 frames per doffer
983 bobbins per hour	924 bobbins per hour
5.8¢ doffing cost per frame per hour	3.7¢ doffing cost per frame per hour

DOFFING COST has been cut about 35% at Joanna Cotton Mills Co. Doffers handle fewer bobbins with the adapter-equipped spindles than they did when wooden bobbins were used. J. E. Osborne, the doffer in this picture, says that the tubes are easy to doff because they are seated at the top.

SPINDLE ADAPTER
Cuts Cost of Spinning

THE REGNERY SPINDLE-ADAPTER, as shown in this cutaway picture, is an aluminum sleeve which is precision-fitted to a regular blade spindle.

Here are results of mill experience with the Regnery spindle adapter, which converts wooden-bobbin spindles to paper-tube spindles.

► Joanna Cotton Mills Co. has saved an average of 3.7c per spindle per year in bolster-replacement costs over a three-year period on 48,066 adapter-equipped spindles.

► Joanna also is saving over $25,000 per year in doffing cost alone.

► One South Carolina mill has saved $30,000 in bolster replacement cost since 300,000 spindles were changed over three years ago.

► Other benefits mills have obtained are 25% less ends down, 41% lower spooler-hand cost, and the lower cost of paper tubes.

By W. A. THOMASON, JR., *Southern Editor, TEXTILE WORLD*

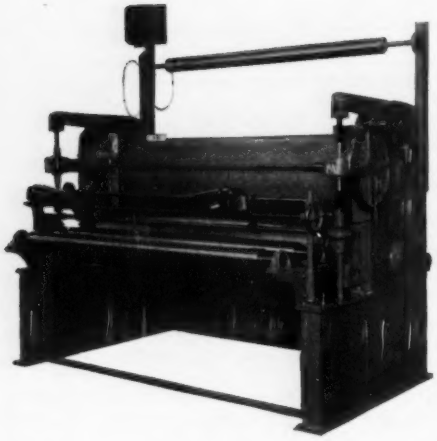
THE REGNERY SPINDLE ADAPTER, invented by Walter Regnery, president, Joanna Cotton Mills Co., has been making outstanding savings at installations at Joanna Mills, Joanna, S. C., and other mills. Several years ago, Mr. Regnery wanted to change over his warp spinning at Joanna Mills from wooden bobbins to paper tubes, but he could not get immediate delivery on the sleeve spindles. So, in order to follow his plan, he developed an aluminum sleeve that is precision made and can be securely locked to the blade of a conventional wooden-bobbin spindle.

Over 2,000,000 spindles have been equipped with the Regnery spindle adapter, of which about 300,000 are in use on warp spinning at one South Carolina mill.

All of the warp-spinning spindles at Joanna are equipped with adapters. The adapters were put on 34,650 Saco-Lowell 2A spindles and 13,416 Whitin medium spindles. Joanna engineers found that bolster-replacement costs for the adapter-equipped spindles averaged 3.7¢ per spindle per year less than the cost of bolster replacement for regular wooden-bobbin spindles. The longer life is thought to result from

Cook absolutely level padding

P&N 2 ROLL PADDER



Sturdy box-type framework, fool-proof pressure control and reliability combine to make this Cook Padder M-5602–2 increasingly popular where absolutely level padding is required. It has particular appeal to dyers of expensive fabrics.

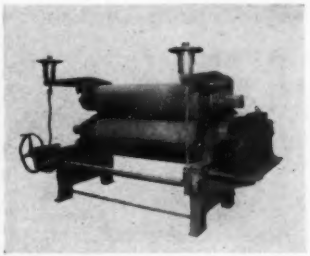
The lever-set pressure control is greatly improved to eliminate any binding and includes a new design roll separator. Furnished in 5, 10, or 15-ton capacity. Furnished any desired width.

With one stainless and one rubber or two rubber covered rolls. Rolls in self-aligning spherical bearings and designed to eliminate deflection. Centrifugally cast stainless roll optional.

Pans, or boxes of stainless steel, plain or jacketted, in various designs to meet your requirements for padding dyestuffs or finishing materials. Pan hinged for easy cleaning.

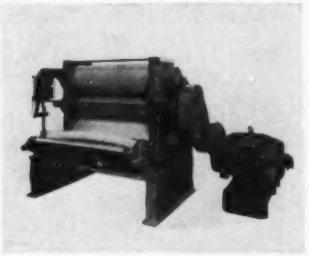
Pressure leveling, expander, let-off and take-up attachments as needed.

All Cook machinery is fabricated in our own shops allowing design flexibility *without* premium cost. Stainless steel fabrication eliminates broken castings and factory-made repair parts. All machines are guaranteed to perform as specified. Your request for information will receive prompt attention.

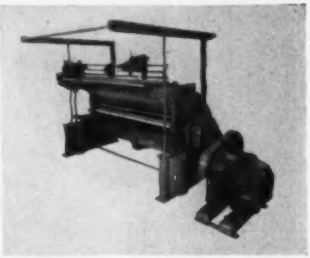


RUGGED STYLE C-M 1833-1 Rugged box-type framework, special bearing mountings and accessibility make this machine appeal especially to plant engineers. This new type bearing mounting saves much expense and lost time when removing rubber rolls for buffing in the plant shop and when replacing them. Furnished with microset, pneumatic or our improved lever-set pressure control in 5, 10, or 15-ton capacity.

Rolls expertly engineered to eliminate deflection. Centrifugally cast stainless steel roll optional. Self-aligning spherical bearings. Pans, or boxes, of stainless steel, plain or jacketted.



COOK 3 Roll Padder M 364-2 Where slippage is a problem this machine provides the solution. Drive is to the center roll which is in fixed position. Pressure is applied to both nips through an ingenious arrangement of pneumatic control. Chain drive is to top roll and necessity of keeping top and bottom rolls exactly same diameter is eliminated. In a short time this padder has proven its value in a number of plants. An automatic mechanical device keeps the rolls separated when not in use. In 5, 10, and 15-ton capacity and in any desired width.



PNEUMATIC STYLE A 1586-1 Box-type frame construction incorporating finest quality materials makes this a popular all round machine. Pneumatic pressure designed with cylinders inserted into frames and includes automatic hold up for top roll. Guiders and guide rolls adjustable vertically. Machine is furnished in 5, 10 or 15-ton capacity. Both rolls rubber covered or one made of stainless steel as shown. Roll bearings are self-aligning spherical roller type with 100% overload rating. Hinged stainless steel pan with or without jacket. Let-off and take-up attachment when required.

COOK-P&N MACHINE CO., INC., 365 Dorchester Ave., Boston 27, Mass.

***SPINNERS LIKE** the large-package spinning. This spinner, Mildred Morgan, with Joanna 23 years, says that the spinning is better now and fewer ends are down.*

less vibration of the adapter-equipped spindles.

The spindles equipped with adapters drive the bobbins at the top. The tubes are actually loose at the bottom of the spindles (0.012-in. clearance) and are fully seated at the top. This feature, however, is common to all tube spinning.

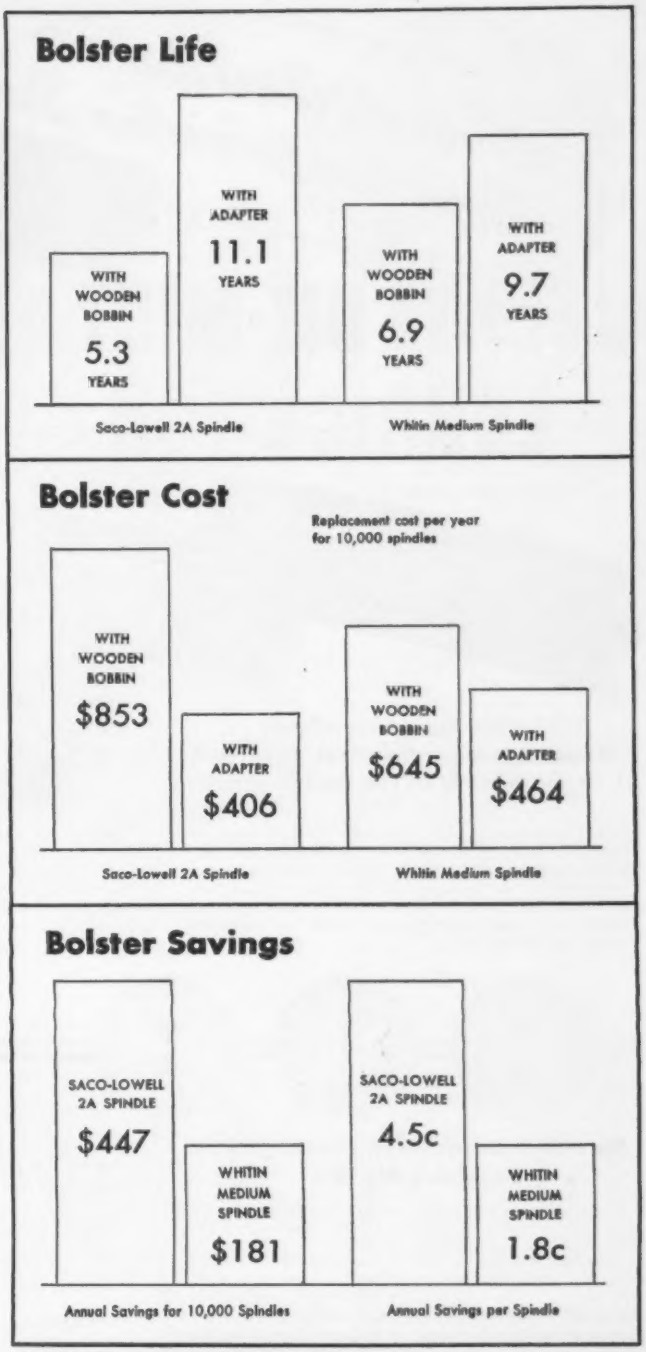
The doffing cost for the spindles equipped with adapters at Joanna Mills has been cut about 35%. With the wooden bobbins each doffer handled 24 frames. Now each doffer takes care of 37 frames and actually handles fewer bobbins per hour. Each doffer used to handle 983 bobbins per hour whereas he now is required to handle only 924.

The doffing schedule is now once every 10 hr.—it used to be once every 6 hr. Savings in doffing cost alone have amounted to 2.1¢ per frame per hour. On 50,000 spindles (252 spindles per frame), this saving amounts to $25,200 per year.

Before Joanna started using the large-package spinning, each spooler hand ran 70 spindles. Now each operator runs 120 spindles. These savings amount to over 41% in labor cost on the spoolers.

In addition to the tangible benefits obtained from use of the spindle adapters, Joanna Mills has found many other favorable factors. Ends down for 32s warp yarn have been reduced from 35 per 1,000 spindles with wooden bobbins to 27 per 1,000 spindles with tubes, even though the ring size has been increased from 1⅞ in. to 2 in. With a 1⅞-in. ring, the ends down with the paper tubes averaged 22 per 1,000 spindles.

The speed of all spindles is 10,000 rpm.



***BOLSTER LIFE** is increased considerably with the use of adapter-equipped spindles. Joanna obtained the results shown in this graph in a three-year test on 48,066 spindles. Adapter-equipped spindles last longer because they are top-driven and are concentric within 0.0015 in. when they are completed.*

Enthusiastic Users Praise Its Great New Lubrication Savings!

Life of Conveyor Chains Extended!
These chains in a Massachusetts plant* cost $500 each, lasted only 3 weeks. Now operate 24 hours a day—with no replacements.

ALEMITE OIL-MIST AUTOMATIC LUBRICATION SYSTEM

Costly Shutdowns on Blower Eliminated!
One bearing failure cost a Georgia mill* $1,000. Now—with Oil-Mist—there are no stops for lubrication, no breakdowns.

Operating Temperature of Dye Machine Cut 70°
Squeeze roll bearing in a North Carolina mill* ran hot, burned out often. Now cooled by Oil-Mist, they run trouble-free.

No Spoilage on Rug Loom from Oil Stains!
Needles on this Pennsylvania plant's* loom travel 2200 feet per minute (that's 25 m.p.h.). Oil-Mist uses only 1 oz. of oil in 20 hours—with absolutely no damage to fabrics.

The Most Sensational Money-Saving Lubrication Development in the History of the Textile Industry

Fully automatic, unbelievably simple . . . Alemite's revolutionary Oil-Mist Lubrication System *atomizes* oil into mist, distributes it through tubing to bearings. Bathes *all* bearing surfaces with fresh, clean, cool oil film. Uniformly maintains oil film on all sliding, rubbing, rolling parts regardless of variations in load, temperature or speed. No "peaks and valleys" of lubrication.

Proved in use throughout the textile industry—in all types of operations . . . on dryers, tubular knitters, elastic web knitting machines, dye machines, washers, full fashion knitting machines, blowers and spinning frames—Alemite Oil-Mist assures *savings never possible before* in machinery lubrication! Get the proof through a Desk-Top Demonstration. Mail coupon today!

*Name on request

No Other Lubrication System Made Provides All This!

- Continuous lubrication—to all bearings simultaneously.
- Automatic control, permitting each individual machine to receive proper lubrication whenever in use.
- Elimination of guesswork. The bearing picks up only as much oil mist as it needs.
- Reduced Oil Consumption—Up to 90% in some cases.
- Positive Seal against dirt and abrasives.
- Reduced Bearing Temperatures.
- Prolonged bearing life—as much as 17½ times.
- Prevention of product spoilage.
- Substantial reduction in the number of oils needed.

Alemite OIL-MIST Lubrication

Oil Mist DESK-TOP DEMONSTRATION. No Obligation—Mail this coupon now. A trained Alemite Lubrication Engineer will give a Desk-Top Demonstration at your office, no obligation.

A PRODUCT OF SW STEWART-WARNER

Alemite, Division of Stewart-Warner, Dept. J-91
1850 Diversey Parkway, Chicago 14, Illinois

☐ Please have your Alemite Lubrication Representative arrange a desk-top demonstration of Oil-Mist. This entails no cost or obligation on my part.
☐ Please send me information about Oil-Mist by mail.

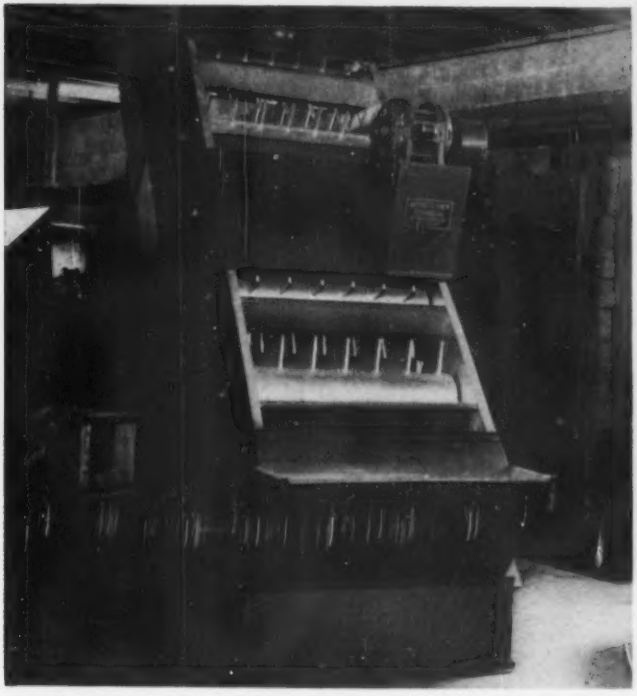
My name _____

Position _____

Company (leave blank if letterhead attached) _____

_____

TEXTILE Equipment NEWS



NO AIR CURRENTS interfere with beater action in this new opening and cleaning machine.

Cotton Opener Developed For Air-Free Cleaning

An air-free cleaner that uses mechanical and centrifugal force to open and clean cotton or other fibers has been announced by Thornbury Machine Works, Inc., P. O. Box 185, Dallas, N. C. Revolving beaters open and pass the stock over 225 vibrating, adjustable, non-choke grid bars. Centrifugal force and gravity open the stock and remove motes, sand, dust, leaf, fly, and other foreign matter.

Since the cleaner is air-free, there is no air movement to interfere with the beater action. Neither is there any air current to carry light leaf through with the cleaned fiber.

Specifications of the cleaner are: width, 52 in.; length, 9 ft., 4 in.; height, 8 ft., 5 in.; weight, about 2,000 lb.

Enclosed Motors Developed for Severe Conditions

Announcement of the extension of the Tri-Clad line of single-phase capacitor motors has been made by General Electric Co., Schenectady 5, N. Y. The line now includes a totally enclosed, fan-cooled construction.

Features of the new design include starting capacitors and a switch mounted within the frame to provide maximum protection with minimum space requirements.

Available in horsepower ratings of 1, 1½, 2, 3, and 5, the new line was developed for use where especially severe conditions of dirt, grit, or moisture are encountered. Several textile applications appear to make use of the special motor characteristics.

Except for the 5-hp. size, which uses only 230-v., the new motors operate on 115-230-v., 60-cycle power supply.

CAPACITOR MOTORS are now available in the totally enclosed, fan-cooled construction shown above.

Knitting Loom Produces Wide or Narrow Fabric

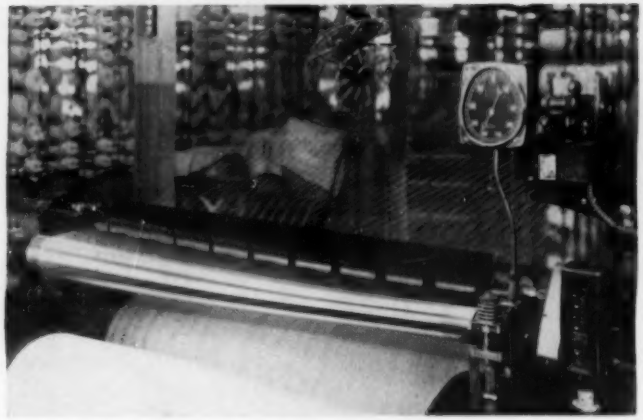
A high-speed knitting loom for standard or novelty fabrics has been announced by McDowell Associates, Inc., 2568 Park Ave., New York 51, N. Y. The machine is said to be capable of using any type of material or synthetic yarn in equivalent yarn numbers of 150 to 900 den.

The knitting loom, available in widths of 60, 72, and 120 in., can also be set up to knit narrow fabrics and trimmings.

Machines are equipped with a.c. motors and variable-speed drives. Patterns are changed by rearranging jacquard knuckles. Warp and filling yarns are individually controlled by electric stop motions.

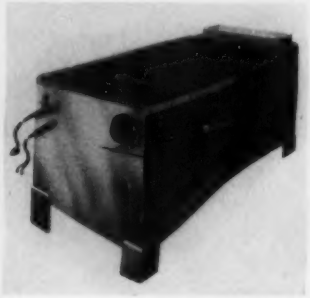
TEXTILE *Equipment* NEWS

Tachometers for High-Humidity Areas



MARINE-TYPE TACHOMETERS, which high humidities don't affect, are now available from Jones Motorola Corp., Stamford, Conn. The watertight tachometers, such as the one shown above on a warper, do not become corroded in moisture-laden atmospheres.

You Can Dry Damp Areas With This Unit



PREVENTION OF MOISTURE DAMAGE in warehouses and other areas is the job of this dry conditioner made by Dryomatic Corp., 812 N. Fairfax St., Alexandria, Va. Model 100, which is shown in the above photograph, costs $594 and dehumidifies a 25,000-cu.ft. enclosed area. Other sizes of the unit are available.

Dye-Winch Cover Made of Orlon

A dye-winch cover, woven of Orlon acrylic fiber, has been developed by Martin Wiener Co., 225 Clifton Blvd., Clifton, N. J. The new cover cloth's special combination of yarn and weave is said to give maximum traction to increase the pulling power of a revolving dye creel.

The new winch cover absorbs little or no color and thereby allows dyers a quick color change on the same machine. Stripping of covers is said to be eliminated.

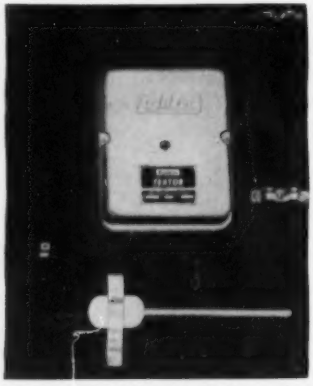
Highly resistant to chemical degradation, the Orlon cloth is said to be impervious to mildew and to last longer than cotton covers. The new product is being made in all widths.

"Spike" Traps Tramp Iron

A new spiked-apron magnetic separator has been announced by Eriez Mfg. Co., Erie, Pa. "Spike," as the separator is called, halts tramp iron in processing lines. The magnets themselves, of Alnico V, have high pulling power.

The new separator is available in sizes to fit any feeder.

Level Switch Operates on New Principle



$90 BUYS THIS LEVEL SWITCH, including the probe. The model is dust-tight and splashproof, and it contains no moving mechanical parts.

A level switch, the Tektor, that is said to make possible the level control of practically all liquids and solids has been announced by Fielden Instrument Corp., 2920 N. Fourth St., Philadelphia 33, Pa. Liquids may be either high or low in viscosity and may have electrical conducting or insulating properties.

The equipment does not rely on floats, diaphragms, or any moving mechanical parts. Nor is electrical contact necessary with the material under control.

The electrode, a simple probe that is inserted in the container at the desired level, is 4 to 6 in. long and $\frac{1}{4}$ to $\frac{3}{8}$ in. in diameter.

A level differential of $\frac{1}{16}$ to $\frac{1}{4}$ in. may be obtained. The probe may be insulated or not. For some applications the sensing element may be flush with the container's inner surface.

New Electronic Micrometer Is Portable, Fast

THICKNESS MEASUREMENTS that can be made with speed and accuracy are said to be possible with this electronic micrometer now being manufactured by J. W. Dice Co., Englewood, N. J. Conducting or non-conducting textile materials can be gauged by the micrometer within accuracies of 0.00002 in., the company claims. All models are portable and do not require levelling.

SERVING THE TEXTILE INDUSTRY SINCE 1899

SONOCO

Precision Paper Products

A cone to fit the yarn – !

If it can be wound on a cone—

If it can be delivered from a cone—

SONOCO will find the best way. For over 50 years SONOCO has been "research experts" to the textile industry on yarn packaging problems.

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

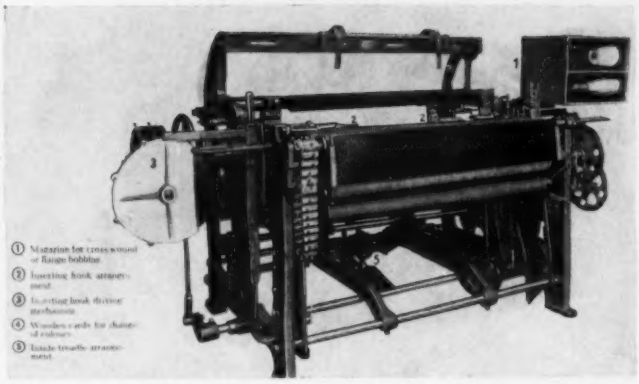
DEPENDABLE SOURCE OF SUPPLY

For more information, write direct or use Reader Service post card.

British Shuttleless Loom Available in U. S.

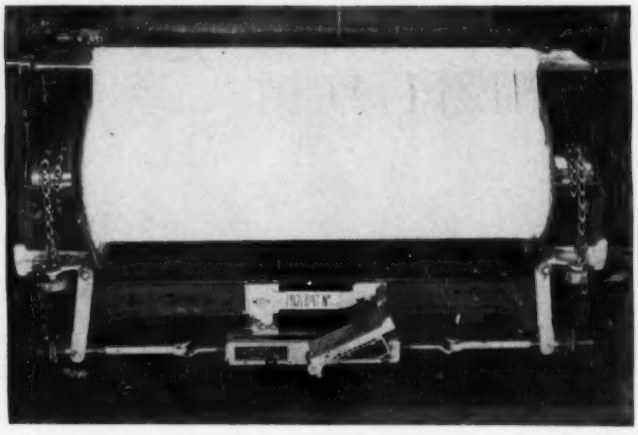
Developed in England, a loom that does not use shuttles is available in the U. S. through John Marshall, Box 815, Fall River, Mass. The Gabler machine draws filling yarns from a one-day-supply bobbin at the side of the frame. An inserting hook carries the filling across. Since the hook is smaller than a shuttle, a smaller shed is required and the warp is subjected to less strain.

Strong vibrations and pulsating power requirements are said to be eliminated in the new machine. No shuttles, pickers, or leather parts are used.



"BATTERY" is filled once a day with one bobbin on this new British weaving machine.

Let-Off Motion Eliminates Weights Behind Loom



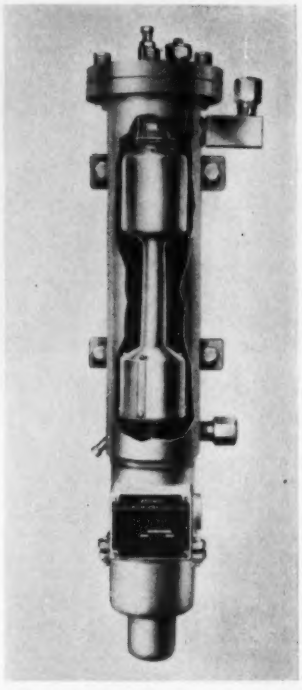
NO WEIGHTS are used in this warp let-off device recently developed in England.

A let-off motion that uses compression springs instead of weights to produce and regulate warp tension has been announced by Platt Bros. Ltd., Oldham, England.

More even tension and easier adjustment are two advantages claimed for the device, called the Richmond let-off motion.

Foot pressure on a pedal is all that's needed to release the tension when the beam has to be rotated.

New Flow Meter Available In Three Ranges



EVENLY GRADUATED, this flow meter is supplied in three ranges.

A new-type flow meter has been developed by Brown Instruments Div., Minneapolis-Honeywell Regulator Co., Philadelphia 44, Pa. Accurate response

(Continued on page 170)

Plastic Coating Protects and Smooths Wood Products

Fenolic 101, a plastic coating for wood or solid-composition surfaces, has been announced by Plastic Cement & Chemical Co., 340 E. 27th St., New York 16, N. Y.

The thermosetting resin is recommended for new, uncoated wood or wood that has had the old finish completely removed. The product can also be used on unpainted composition surfaces such as masonite.

Application can be made by brush, spray, dip, or roller. The number of coats required depends on the finish desired and the wood used.

The coating can be used for bobbins, floors, lease sticks, tables, pallets, fiber containers, chutes.

Strong at every point

See for yourself how strong a needle can be. Check the butt, the beard, the shank of a Textile Spring-Beard Needle. Every step in the manufacture of Textile Spring-Beard Needles is carefully calculated to give you needles that are strong at every crucial point.

Strength is one of the many advantages you receive through Textile's quality controls—automatic and electronic—which constantly check each stage of production. Notice the results in better fabrics and lowered production costs.

TEXTILE MACHINE WORKS, READING, PENNA.

Textile

SPRING-BEARD NEEDLES

For Full-Fashioned Knitting

For Tricot Knitting

and low initial cost are features of the new unit, according to information from the manufacturer.

Brown's engineers say that the new flow meter has an evenly graduated meter scale and electronic integration. Available either as a mechanical flow meter with integral recorder, or as an electrical transmitter to be used with an inductance bridge receiver, the flow meter is of the differential type.

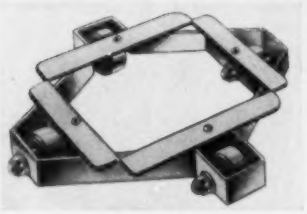
The new meter is supplied in three ranges: 53, 119.25, and 212 in. of water, and for 750 and 1,500 psi. static pressure. The three ranges are slightly greater for dry calibration.

Dillon Universal Tester Improved

Several design improvements for the Dillon low-range tester have been announced by W. C. Dillon & Co., Inc., 141 So. Circle Ave., Forest Park, Ill.

Top range of the instrument is now 300 lb. instead of 100 lb. The motor drive has been improved proportionately. A solid (instead of flexible) shaft now connects the speed control to the motor transmission. The quadrant arm is now one continuous casting, and the speed-control dial is mounted on top of the tester base.

Steel Truck Has Four Double-Ball-Bearing Wheels



"WEEL-EASI," an 18-in. square bogie truck, has been announced by Industrial Trucks Ltd., Essex Rd., London, England. The load can be turned in its own width and rides only 2½ in. above the ground.

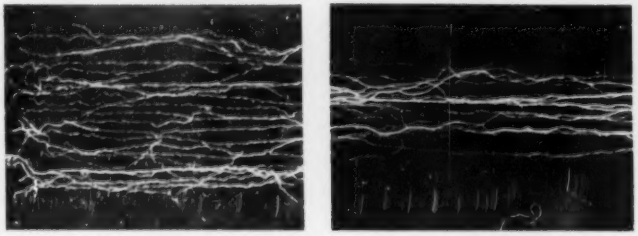
Animal-Protein Synthetic Has Wool-Like Composition

A NEW SYNTHETIC FIBER, Merinova, is being produced from an animal-protein base by Snia Viscosa of Italy. The chemical composition is said to be almost identical with that of wool.

Some properties given by the manufacturer for the fiber are:

	Dry: 1.1 g.p.d.
	Wet: 0.6 g.p.d.
Elongation:	Dry: 50%
	Wet: 60%
Resistance to acids:	Retains softness after boiling in 4% sulphuric acid. Can be carbonized.

Best results are obtained when Merinova is blended with other fibers. No difficulties are said to arise in spinning on cotton, woolen, or worsted machinery.



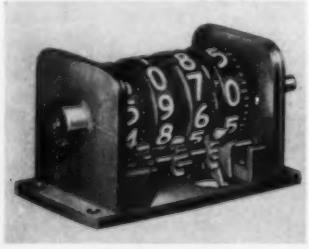
MERINOVA FIBERS (left) dyed in sliver or top form, exhibit more crimp than dyed Australian fine wool (right).

The fiber will not felt, but is said to assist felting when blended with wool.

Merinova can be bleached white like wool, preferably by using peroxide and Blankit I, a General Dyestuff Corp. product. The fiber can be dyed with all wool dyestuffs and with a few direct colors. In blends with cellulosic fibers or nylon, cross-dyed effects can be obtained. Merinova-blended fabrics can be treated with resin finishes.

Sizes being produced at present are 3 and 5 den., 1⅝, 2¾, and 4 in. U. S. agent is John J. Ryan, 25 Broad St., New York, N. Y.

High-Speed Counter Counts 15,000 Per Min.

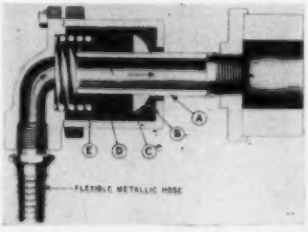


FIGURES MORE THAN ¼-IN. high are one feature of this new high-speed counter, which is available in any figure capacity.

Higher speeds than ever before available in a mechanical counting device are claimed for a new series of counters announced by Veeder-Root Inc., Hartford 2, Conn. The counters, incorporating the high-speed Geneva transfer, are rated at 1,500 drive-shaft rpm. This rating gives 15,000 counts per minute with a standard 10-digit wheel.

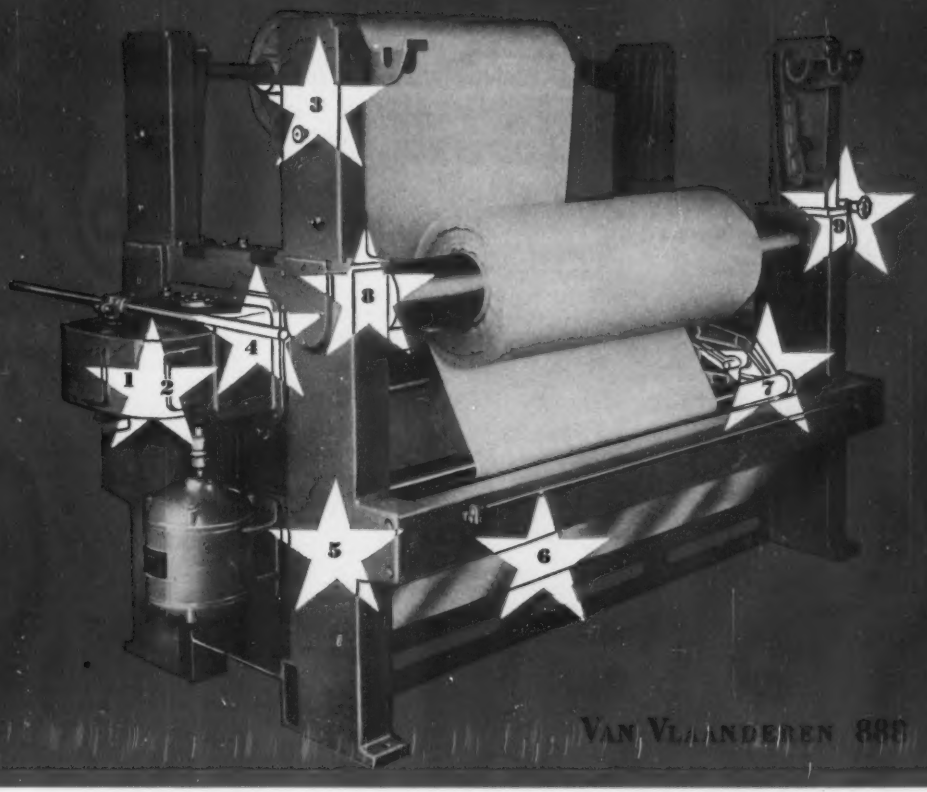
The new counters, of the non-reset type, add when the drive shaft is driven in one direction and subtract when the shaft is rotated in the opposite direction. Any figure capacity is offered to meet different requirements.

Rotary Joints Available For Higher Pressures



CALENDERS and other machines where lateral roll movement may affect pressure joints can use this heavier-duty joint.

(*Continued on page 172*)



VAN VLAANDEREN 888 JIG

STAR PERFORMER

The Van Vlaanderen 888 Jig in one short year has developed into the star performer of many dye houses. Here's why it's in the limelight.

- New compact and silent worm type main drive operating in oil.
- Multiple disk friction clutches (dry type) eliminate drag entirely.
- Multiple roller chain drives completely housed and running in oil reduce maintenance and assure clean operation.
- Entire drive system controlled by shifter lever operated from either end.
- Heavy vibration free cast iron frames and separators.
- Stainless steel tank with new overflow arranged sideways.
- Oscillating expander unit with stainless steel curved bars and immersion rolls mounted on special stainless steel roller bearings.
- Rubber covered jig rolls mounted on anti-friction bearings.
- New malleable iron brakes with tension indicator permit quick and accurate control.

VAN VLAANDEREN

You are invited to see this machine.

MACHINE COMPANY

370 Straight Street, Paterson 3, New Jersey

World's largest manufacturer of machines for processing modern fabrics

Self-supporting rotary-pressure joints are now available in heavy-duty construction suitable for operating pressures up to 250 lb., according to the Johnson Corp., Three Rivers, Mich. This type joint is used where heating or cooling agents must be admitted to rotating rolls.

The new series retains the packless, self-lubricating, and self-adjusting features of the company's standard line.

Circular Knitting Machines Developed in France

Two new knitting machines have been announced by Lebocey Machines, 25 Pasteur Ave., Troyes, France.

The CL-61 is for 1x1 and 2x2 rib patterns and refinements; the CL1-61 is for interlock rib patterns.

Among the features of the machines are: automatic lubrication, electronic control, uniform take-up, pushbutton controls, and adjustable pulley speeds.

Rapid adjustment of driving-belt tension is possible. A slow-motion drive permits observation of stitch formation and needle adjustment. Controls are located at four points on the machine.

Yarn feed is self-adjusting.

NEW *Dyes* AND *Chemicals*

New Duller Developed For Nylon Hosiery

A new type of hosiery duller, Ronyl Duller S, has been developed for nylon hosiery by Richmond Oil, Soap & Chemical Co., Inc., Philadelphia, Pa. This duller is said to give a firm hand to the hosiery and to eliminate the need for additional dullers. The manufacturer states that the usual finish can be reduced from 30 to 50%, with that percentage being replaced with Ronyl Duller S.

This duller is easily miscible in the regular finish bath because it is of the emulsion type. The product has been used in commercial runs by a few dye houses and is said to produce a finish that is firm, dull, and flexible.

Looms Cleaned on the Floor With Emulsion Cleaner

A concentrated emulsion cleaner, Magnusol, has been developed for cleaning looms by The Magnus Chemical Co., Inc., Garwood, N. J. For this purpose, Magnusol is used admixed with kerosene or safety solvent to remove grease and solid dirts from the metal surfaces. Here's the way that the manufacturer suggests the cleaner be used.

Have a man spray a mixture of one part Magnusol to eight parts safety solution on all surfaces of a loom. By the time the man has reached the end of the loom opposite his starting point, the solution will have penetrated into all dirt deposits and loosed their bond to the metal surfaces. The spraying is said to be effective in areas that are inaccessible to brushing.

The same man then goes over the loom with a steam gun, which flushes off all grease, oil, dirt, and fibers in the emulsion that forms when the Magnusol mixture combines with water. A steam gun is preferred because it greatly speeds drying after flushing, but the same results can be obtained if you flush with water at tap temperature.

The cleaner is said to be non-toxic, noninflammable, and harmless to metals. The manufacturer also states that it will not attack painted surfaces where a good grade of paint has been used. Users are said to report that they get better cleaning than with ordinary cleaning methods and get it three or four times faster.

Du Pont Develops New Water Repellent

A new water repellent, Quilon stearato chromic chloride, has been developed by Grasselli Chemicals Dept., E. I. du Pont de Nemours & Co., Wilmington, Del. Quilon was developed primarily for the treatment of paper products; but it is said to be effective on cellulose, glass, and polyamide materials. Specific fibers that can be treated successfully with this product are cotton, rayon, hemp, wool, silk, nylon, and synthetic protein fibers.

Quilon is a water-soluble chromium-stearic-acid complex. The chromium anchors tightly to the surface that is being treated, and the stearate group orients outward to provide repellency to water and other aqueous solutions.

Quilon treating solutions are generally compatible with basic dyestuffs under specific temperature conditions. Full water repellency is said to be obtained with a combined solution without adversely affecting the desired color.

New Dyeing Assistant Gives Rich Shade to Dacron

A new dyeing assistant, Amidye, has been developed for use in dyeing Dacron polyester fiber by Amalgamated Chemical Corp., Philadelphia, Pa. Amidye is said to give deeper, richer shades to Dacron yarns, knit goods, and woven fabrics. Amidye is a solution of sodium salt of a complex phenol combined with suitable active agents. It is said to thoroughly exhaust the dyestuff.

According to Hillary Robinette, Jr., research director at Amalgamated Chemical Corp., no difficulty has been experienced in obtaining excellent wet and dry crock-fastness and extreme depth of shade. Experiments with Amidye are said to have produced excellent results on maroon, cordovan, and navy sweaters and socks, where lustrous shades are important.

The manufacturer states that Amidye can be used with any method of dyeing and that it has been used successfully in commercial dyeing of Dacron in various forms, including: men's hose in rotating machines, sweaters in paddle machines, package dyeing, skein dyeing, and piece-goods dyeing.

New Product Prevents Static Charges on Nylon

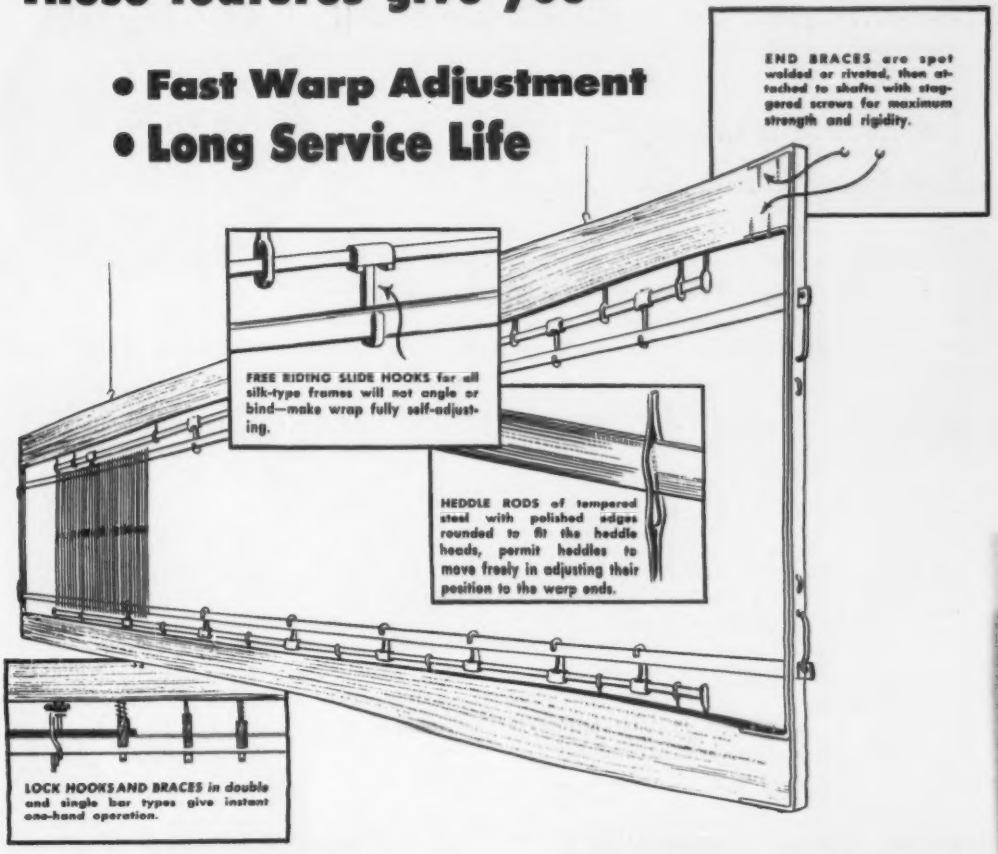
A new synthetic organic compound, Dextrol Lektrostat B, has been developed by Dexter Chemical Corp., Boulevard P. O. Box 1, New York 59, N. Y., for use as an antistatic agent on nylon. This product is said to answer the electrostatic problem usually encountered in spinning, drying, and mechanical handling of nylon yarns and fabrics. It is also said to eliminate several discomforts of finished nylon garments, such as sticking or clinging of the fabric to the body caused by the buildup of the static electric charges on the fabric.

Dextrol Lektrostat B is said to have high affinity for nylon. It can be added either to the dyebath or to a separate bath after dyeing. Application by the usual padding operation is said to be permissible. Actual plant runs with this agent are said to show that from 1 to 3% of the agent on the weight of the goods will provide satisfactory results.

This new chemical is reported to be readily soluble in water and slightly alkaline in reaction. It is compatible with anionic agents under normal processing conditions. It is resistant to dry cleaning and washing, has a definite softening effect upon nylon fibers, and has no adverse effect upon the lightfastness of colors.

These features give you—

- **Fast Warp Adjustment**
- **Long Service Life**


END BRACES are spot welded or riveted, then attached to shafts with staggered screws for maximum strength and rigidity.
FREE RIDING SLIDE HOOKS for all silk-type frames will not angle or bind—make wrap fully self-adjusting.
HEDDLE RODS of tempered steel with polished edges rounded to fit the heddle heads, permit heddles to move freely in adjusting their position to the warp ends.
LOCK HOOKS AND BRACES in double and single bar types give instant one-hand operation.

with WALKER *Superior* HEDDLE FRAMES

WALKER SUPERIOR HEDDLE FRAMES, with patented lock hooks and center braces, give you instant one-hand operation for easy warp adjustment on the loom. Walker manufactures frames and frame accessories for all yarns and weaves, including special section frames for narrow fabrics.

Walker Frames combine light weight, strength and rigidity to bring you extra service life at low cost. Select straight-grained wood for shafts is thoroughly air-dried and moisture sealed. Shafts can be finished (paint or enamel) to customer's specifications at slight extra cost. Steel ends and fittings are cadmium plated to eliminate rust. Quick, easy installation and maintenance is assured by convenient Walker—one hand, instant open—lock hooks.

Write for folder describing the many advantages of Walker Heddle Frames and Free Riding Slide Hooks.

WALKER
MANUFACTURING COMPANY, INC.
ATLANTIC & RUTH STS., PHILA. 34, PA.
WALKER LOOM HARNESS
HEDDLES • HEDDLE FRAMES • REEDS

Pointers FOR SUPERVISORS

Emotional Maturity—A Must For Good Labor Relations

Every supervisor knows how often situations that must be handled with good judgment arise in working with men on the job. Here are some pointers on how to deal with the various personalities of workers under your supervision and maintain their human dignity and their respect for your authority at the same time.

By FRANK T. DE VYVER

A FEW WEEKS AGO at our house we had a visitor—a young lady of ten. When it came time to take the long automobile ride home, she insisted that a shaggy mongrel the neighbors were trying to dispose of should go along in the car. Fortunately more mature heads prevailed, but not until after a stormy period during which the young lady displayed many of the traits of emotional immaturity usually associated with one of her years.

Sometimes in considering various labor-relations cases that come to foremen, one is reminded that emotional immaturity is not confined to young ladies of ten. Too often both the worker and the foreman display the same lack of maturity as my ten-year-old relative. Barbara demanded the impossible. She couldn't take that dog home with four adults and herself in the car. Yet reason was to no avail. Have you ever had a worker like that in your department?

A few days ago the union brought in a grievance demanding that a certain lady be allowed to share the work with the other spare hands, although she had never bid on a spare job. She wanted us to create an extra spare job for her, because she wanted to work on the first shift. The fact that under the contract provisions she did not have enough seniority to stay on the first shift made no difference to her. She was asking the impossible just as Barbara was. A foreman sees similar examples every day.

Each one of us in a supervisory capacity has to watch that he does not also display Barbara's emotional immaturity in various ways. Perhaps we don't ask the impossible of the men and women working for us. Too many supervisors, however, find, like Barbara, that they cannot gracefully accept the inevitable.

How Do You React to Restrictions?

Today in industry we all have to follow certain rules laid down by the federal and state governments. Perhaps we don't like the protection given to unions by the Taft-Hartley law and its predecessor, the National Labor Relations Act. Perhaps we think present-day wage-stabilization procedures are simply a lot of red tape designed to keep us from giving raises to well-deserving workers. Or perhaps we don't like the restriction of the wage-and-hour laws making it impossible to work certain groups of people overtime without paying them time and one-half for those overtime hours. Most foremen, too, work under certain company policies and restrictions. Perhaps these are also burdensome and irritating.

The emotional maturity of a foreman can often be judged by his reactions to restrictions like these. Does he get mad and pout, or does he refuse to accept the restrictions and try to get around them? Each year the Wage and Hour Div. finds thousands of violations. Some of those, to be sure, arise through ignorance, but many are cases where foremen have tried to find ways around the inevitable they refuse to accept.

What Good Is Name Calling?

Barbara still wanted to take the dog the next morning, after we all thought she had accepted the parental will. "You're the meanest mother in the world," she said. Here she displayed another sign of emotional immaturity so often found both among workers and foremen. When we personalize and call names we can hardly be considered better than children. It's part of my job to read a number of papers published by labor unions. Some of

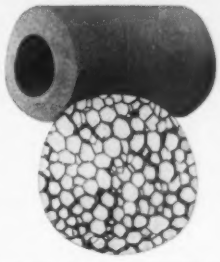
(Continued on page 219)

New Member of the Team

Frank T. de Vyver

Meet Frank T. de Vyver, newest member of the team that writes TEXTILE WORLD's Pointers for Supervisors department. Mr. de Vyver is (and has been since 1941) vice president and director of personnel relations of Erwin Mills, Inc., Durham, N. C.

Mr. de Vyver received his A. B. and M. A. at Oberlin College, and another M. A. and a Ph. D. at Princeton University. He has been an instructor in economics at Princeton University and a professor of economics at Duke University.



Here's why cork cots spin quality yarn.

Millions of tiny cork cells like these (here magnified 1200 times) give cork cots their high-friction surface. As the yarn passes under the roll these cells act like tiny suction cups. They hold the yarn with a firm grip that will draft uniform yarn in the finest counts.

For spinning quality yarns there is no better cover

Mill men tell us they've never found a cover that drafts better than an Armstrong's Cork Cot. Its high-friction surface holds the yarn in a steady grip that drafts out uniform, top-quality yarn on even the finest counts.

This superior high-friction drafting surface also prevents eyebrowing. Loose fibers are pushed back under the clearer board where they belong. Fewer fibers are pulled out of the stock. In fact, some mills report that clearer waste drops as much as 50% when Armstrong's Cork Cots are installed on their frames.

Best of all, Armstrong's Cork Cots are economical. Low in first cost, they also save time in the roll shop. Because they are seamless and pre-glued, they slip on the roll in one quick operation. An occasional light buffing keeps these covers spinning like new.

Next time your Armstrong man calls, ask him to arrange a trial installation of Armstrong's Cork Covers. If you prefer, write Armstrong Cork Company, Textile Products Department, 8309 Arch Street, Lancaster, Pennsylvania. Available for export.

ARMSTRONG'S CORK COTS

for high-quality spinning . . . at low cost

Exploring

The Textile Community

By MILDRED BARNWELL ANDREWS

Simple SAFETY MEASURES Give Confidence On the Job

▶ ***A good safety program isn't hard to set up, but it requires a continuing effort and continuing participation by all concerned. Here are some tips on how other mills do the job.***

MILDRED ANDREWS

IT HAD BEEN a grand trip through the mills, seeing the new layout, inspecting the newest in machinery installations that would provide more efficient operation. I listened eagerly to the manager's description, given with such happiness and pride, of his long-range modernization program and the fine results it would accomplish for the workers in his mill.

But his mien and his voice changed as we left the new installation and continued our trip through the plant. More than once the executive stooped to pick up a bobbin from the floor to toss it in a nearby bin, and when he gave a gentle kick to a loose Coca Cola bottle, shoving it in a corner, his temper was obviously ruffled.

"It's this kind of thing," he growled, "that keeps our safety record from being good. Why, at home my wife wouldn't allow anything left around on the floor. All the time she's picking up stuff the children have scattered—skates, balls, and blocks. 'Somebody might trip or fall,' she'll say. Now, here in the mill, just last week we had two people hurt. Well, I guess I'll have to take it up again with the super," he sighed, discouraged over his mill's housekeeping problems.

Safety Needs Participation

As I drove away from the mill I wondered just what steps would be taken toward better safety measures. There was every evidence of tremendous cash outlay throughout the plant for better machinery and other modern installations to improve efficiency. Good housekeeping for improved safety or lost-time control meant outlay of thought and time and the adoption of disciplinary training. The top executive was obviously interested in the welfare of his people, but safety programs must be participated in by every member of the organization from top to sweepers.

Program Should Be Continuous

This was not a rare case of poor housekeeping. I thought of a mill in New England where I had seen banana skins carelessly thrown under a loom—and another where the freight elevator operated through an unguarded opening in the floor. Such accident potentials have been overcome by many mills through proper study and the setting up of simple rules of good housekeeping. If every textile mill would inaugurate, instead of a "drive for safety," a "continuous safety program," the non-hazardous textile industry would move from its place as tenth in accident severity and fourteenth in frequency among 40 other industries, toward a position nearer the bottom.

Today, despite the remarkable record of many mills of millions of man-hours of operation without loss of time through accidents, textile manufacturing is topped in safety records by many industries, including communications, aircraft manufacturing, tobacco, glass, steel, electrical equipment, cement, chemical, automobile, railroad equipment, service, leather, rubber, printing and publishing, wholesale and retail trade, in either or both accident frequency and accident severity.

Get a Program—and Stick to It

There are many mills that have overcome their accident problems in ways easily adaptable to other plants. All it takes is a program carefully set up and rigidly adhered to. And the rewards are well worth the effort. In Georgia, where records show the textile industry to be the safest major industrial enterprise, safety achievements in recent years have resulted in current reduction of 14.5% in the manual rate for workman's compensation insurance.

Some splendid records of no accidents were chalked up this year throughout the entire industry. To improve the record, other mills are actively working on newly inaugurated safety programs. One of the most efficient methods of establishing plant-wide interest in safety is through safety committees. One of the best operates in a mill in Alabama. The Committee, which serves in alphabetical rotation from the employee roster, changes one-half its membership each month, retaining 50% experienced committee men and gaining 50% new membership with a new and fresh viewpoint. The Committee sets up rules to regulate conduct. For example, an employee making a direct violation of safety is first warned. Should the violation be repeated, he is laid off for a week. All minor infractions of safety rules are called to the attention of those responsible.

What Your Mill Can Do

Here are some simple but effective safety measures immediately obvious to those who work in or visit a mill. Traffic lanes are marked by clearly defined, painted lines; traffic lanes are kept clear, and traffic remains in them. Fire buckets painted bright red are kept filled with water at all times and are hung throughout the plant on posts that are painted red also. (Have you checked your fire-

(Continued on page 222)

SUPERIOR PERFORMANCE PAYS YOU DIVIDENDS!

1. Fast Acceleration
2. High Production
3. Quality Work
4. Dependability
5. Low Maintenance
6. Easy Operation
Union Special
Find out what the LOCKSTITCH can do for you! See your local Union Special representative, or write for full information.

● Here's the machine that's designed and built to deliver SUPERIOR PERFORMANCE! It's the new Union Special LOCKSTITCH. For single needle, plain seaming operations, it offers these important advantages:

SMOOTH, FLAT SEAMS! New feed mechanism produces smooth, symmetrical feed curve. Insures even feeding of materials and smooth, flat seams even on curves.

SUPERIOR FOR TACKING, STAYING! Performance that can't be beat — thanks to superior, scientific thread control. Less sensitive to foot lift variations when tacking.

PERFECT, UNIFORM STITCHING! Stiffer needle construction results in highly uniform line of stitching. Improved hook timing provides better stitch control.

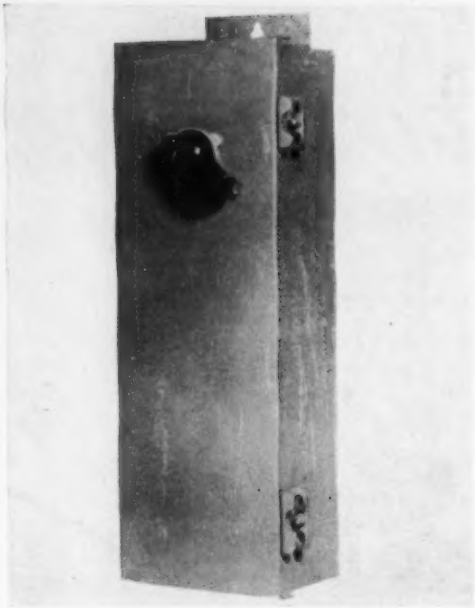
NO FEED MARKS! NO CUTTING! Handles the lightest nylon, cotton, or rayon without feed marks or cutting.

FAST, LIGHT RUNNING! New, higher speed. Light weight parts make for smooth, effortless operation—fast starting, stopping — positive, yet gentle, feeding action.

Union Special

World's Largest Exclusive Builder of Industrial Sewing Machines

MACHINE COMPANY 403 N. FRANKLIN ST. • CHICAGO 10, ILL.



Is this the type of enclosure you want?

LINTY-ATMOSPHERE ENCLOSURES under the recommended specifications would be gasketed and have no knockout or mounting holes.

AIEE Textile Industry Subcommittee

TENTATIVE ENCLOSURE SPECIFICATIONS FOR LINTY ATMOSPHERES

1. The enclosure shall be designed to prevent the entry of lint and escape of sparks. (Construction seams and mating surfaces shall be tight).
2. The completely assembled, unmounted device shall have no unused openings. (There shall be no holes in the case, not even mounting holes, as built).
3. There shall be no conduit knockouts or conduit openings, but suggested conduit-entry locations are to be suitably marked. (All openings shall be cut at time of installation).
4. Where the overload reset button is a separate device, it is to be operable only by opening cover (for resetting).
5. The enclosure will have sufficient room on each side of the mechanism to accommodate wires of proper size for current rating of the device.
6. The cover-latching device shall be positive and reliable. (It shall hold cover tightly closed and not be subject to accidental opening).

MILL ENGINEERS—

Here's A Chance to Write Your Own Specifications

▶ ***Here are new suggested specifications for electrical-equipment enclosures for use in linty atmospheres. The textile-industry subcommittee, AIEE, wants your comments and ideas.***

THE SUBCOMMITTEE ON TEXTILES, American Institute of Electrical Engineers, wants your help. The committee has studied the problems of mill fires caused by lint getting into electrical-control enclosures. It has come up with specific recommendations on functional features to be incorporated in a suitable case design. These specifications are offered here to mill men for consideration and comments. Worthy suggestions for modification of any provisions will be incorporated in the final form of the specifications. The final specifications will constitute an ideal through which manufacturers of such equipment may aim to satisfy requirements of linty-atmosphere applications.

Mill men and fire-insurance people know well the inadequacy of general-purpose enclosures (NEMA, Type 1) for electrical-control equipment in the linty atmospheres of textile mills. A substantial percentage of claims paid for fire damage result from failures at control enclosures.

Fine lint, almost dust-like, finds its way through the smallest apertures in enclosures containing contactors, switches, or relays. Magnetic starters, loom switches and fusible knife switches are examples. A loose-fitting cover, a missing conduit knockout, a poorly welded corner seam, a bent spring on an overload reset button—all can be responsible for allowing lint to enter the box. Once inside, the lint lays across insulating barriers and provides a bridge over which phase-to-phase and phase-to-ground short-circuit currents may flow. The trouble usually shows up after a shut-down period during which the contents of the case cool and moisture in the air condenses on the lint. Wet lint is an excellent conductor, and when the control is re-energized, the conditions for short circuit and fire are set up.

The openings that originally permit entry of combustible fly also provide the routes for fire to spread from inside the enclosure to the mill generally.

Obviously what is needed for linty atmospheres is an enclosing case that satisfies two fundamental objectives:

a) it should prevent lint from entering;

b) it should prevent fire and sparks from escaping.

Here are the suggested specifications offered by the Textile Industry Subcommittee, AIEE, to fulfill these two objectives. Read them over and send your comments, favorable or unfavorable, or your constructive criticisms to:

Mr. R. S. Gardner
AIEE Headquarters
33 West 39th St.
New York, N. Y.

for transmittal to the textile-industry subcommittee.

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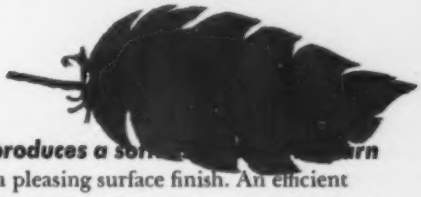

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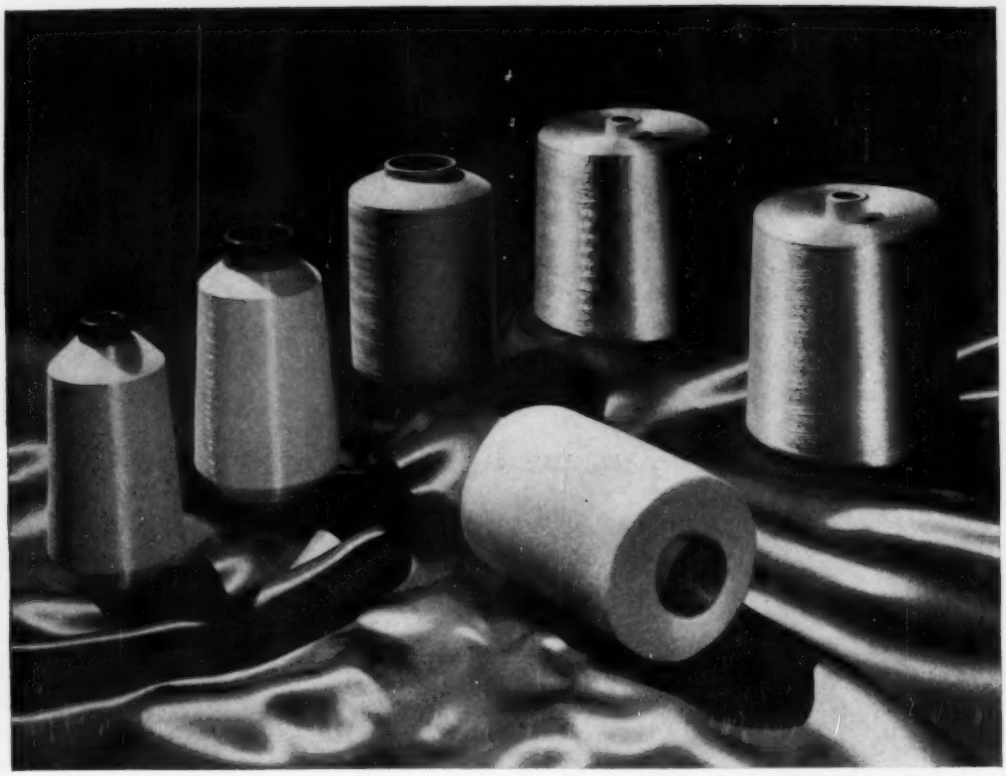

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LETTERS FROM OUR READERS

Address all communications to:

Editor, *Round Table*, TEXTILE WORLD
330 West 42nd Street, New York 18, N. Y.

Round Table

SCRAP-STEEL DRIVE

Dear Editor:

The government and the steel industry are bearing down on the need for a short sprint in the collecting of scrap for steel-plant use through the winter.

There are two kinds of heavy industrial scrap. "Dormant" scrap comes from obsolete machinery, tools, jigs, dies, fixtures, and other equipment. It's just sitting around, waiting for someone to make up his mind to junk it.

The second kind is production scrap—leftovers in the process of making things out of steel. This requires constant watchfulness as an every-day requirement of plant operation.

It is often surprising to industries what a scrap drive can turn up. In three months, Eastman-Kodak found 88 carloads of dormant scrap lying around its plants. The Hartford, Conn., plant of Pratt & Whitney has 250 men assigned to collection of production scrap. They sell $1,000,000 worth of it a year.

We would appreciate it if you would help publicize this very important industrial scrap drive for defense among American textile mills.

RALPH SMITH

New York

FRANK NAGLE

Dear Editor:

We read in *Sales Signals* with regret the announcement of the death of our friend, Frank Nagle. We recall many pleasant memories in our associations with Mr. Nagle through the years.

His service to society as well as the textile industry was outstanding. His influence affected many who are not in a position to express their sentiments at this time.

We consider the passing of Frank Nagle a mutual loss to us, as well as to you and the entire textile industry.

ALFRED B. GOULD
Leighton Machine Co.

Manchester, N. H.

WOOL RELAXATION

Dear Editor:

Since the elastic properties of wool play such an important part in determining its behavior at every stage of processing, it is probable that the practical significance of variations in composition and structure lie mainly in the variations in elastic properties, Prof. J. B. Speakman, Dept. of Textile Industries, University of Leeds, England, said recently before a British dyeing group.

Relaxation is an essential feature of so many of the processes through which wool passes. And when the elastic properties of different animal fibers were measured, differences of substance were at once revealed.

The method of experiment was to stretch the fibers 40% in water at 25° C. and measure the time taken for the tension to fall to half its initial value. Ten fibers of each type were examined, and the average values for the half-tension time were:

Human hair	233 min.
Mohair	156 min.
Cotswold wool	114 min.
Australian Leicester wool	88 min.

Fibers from the same sample of material were by no means uniform in plasticity. In the case of Cotswold wool, the half-tension times ranged from 82 to 170 min.

Other experiments have shown that the elastic properties of wool increase with a rise in temperature and pH. Referring to further experiments carried out, Prof. Speakman said relaxed fibers were heated for 24 hr. at 70° C. in solutions at various pH values, with and without sodium chloride. Salt had an adverse effect on recovery, and in its absence maximum recovery was obtained at about pH 6.

It was concluded that the weakening effect of plastic flow on animal fibers was best corrected by a 13-hr. treatment in water at 72° C.

This result is of particular interest in

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"No, No, Miss Finch, in ordering porcupines you DON'T phone the zoo!"

relation to the process of "potting" as applied in the finishing of fine woolens. The cloth receives, all told, four hours of heating in water, plus an indefinite number of hours of heating during the cooling periods.

Restrengthening of relaxed fibers takes place at temperatures below 70° C. Its occurrence is, no doubt, one of the reasons why the "craftsman" finisher has always insisted that cloth should be "rested" between one process and the next. It may also be one reason why the strength of woolen textile materials increases slowly during storage.

L. P. A.

Lancashire, England

SYNTHETIC-FIBER CHART

Dear Editor:

There is one thing about which I feel very strongly indeed, a thing that needs changing and improvement, and that is the textile-fiber chart.

The chart put out by TEXTILE WORLD shows a cross section of various synthetic fibers, and the physical properties are underneath. I think any who are in the textile game will find it valuable. I have one in my office, behind glass; and it is more looked at than anything else.

I think we could recommend to TEXTILE WORLD that you go on and put out another edition and get it up to date, because there are several new fibers that are not on there. I know one weaver who says he can hardly get along without that little chart. It goes to show how important it is.

With all the physical and chemical properties you have in there that anyone ought to have at his finger tips--you can put them together and build a fabric.

F. M. JOHNSON
Pacific Mills

Rhodhiss, N. C.

[*Thank you for your kind words. See page 105 of this issue for the revised chart.*—EDITOR]

MOCK-TWIST PLYING

Dear Editor:

In the British worsted and fancy woolen trade, the doubling of two ends of different colors is quite common. Such yarns are referred to as "twist shades." In woolen yarns, spinning twist is usually "S" twist, and ply twist is "Z" twist. Worsted yarns are ordinarily constructed with "Z" twist in the spinning and "S" twist in the ply.

For ordinary colored-mixture weaving yarns, ply-yarn twist is less than that used for marl (mock twist) shades. So it is a revealing experiment to try out ordinary spinning twist in a marl shade and then to put in extra twist and weave a further sample. The contrast is astonishing. The extra twist brings the pattern to life. An insufficient twist in marl shades gives a dull and flat appearance.

A 2/48s merino worsted yarn, for instance, might have only 16 t.p.i. of ply twist for an ordinary-mixture yarn, but an equivalent count of yarn may take 26 t.p.i. for a marl shade when doubled. Or in another example, a 2/36s Yorkshire skein woolen yarn might have 10 t.p.i. in a solid or mixture shade, but it might have 16 t.p.i. in a marl shade to give a smart appearance to the finished fabric.

In general, an increase of approximately 50% in marl-yarn doubling is found desirable for best results in the finished cloth.

A point that should not be overlooked is that the single count should be spun light enough to allow for contraction in twisting. If spun in the ordinary way, as for normal doubling, it will be found that the resultant count will be too heavy when the harder marl ply twist is added.

H. M.

Yorkshire, England

IRRIGATED COTTON

Dear Editor:

Cosmos Imperial Mills Ltd., Yarmouth, Nova Scotia, has been unable this year to buy its requirements in raw cotton in the Southern United States, as in the past, and so has shifted to irrigated California cotton. As you know, irrigated cotton often behaves differently from the cotton grown in states blessed with natural rainfall.

A Cosmos Co. labor-and-management production committee, set up as liaison between top management and the working force, is watching with interest the behavior of the irrigated cotton as it is processed. The mill manager, Col. U. G. Dawson, has pointed out that changes, such as settings, may have to be made to allow for the "extra dryness" of the California cotton. The committee is making it a point to see that employees report any unusual processing details.

Is this not another example of how textile people all along the line are realizing more and more that steady work and good wages are possible as long as business is good, and that anything any employee can do to help maintain or improve quality and increase production will help assure prosperity for both company and employees?

WILLIAM MCNULTY

St. John, N. B.

Test Your TEXTILE IQ

►Each correct answer rates 10 points. A total of 70 is passing; 80, good; 90, excellent; 100—you're a genius! Keys to answers are on page 222.

1. To a mill that spins yarn for heavy cord, the most important fiber property is:
   a. fineness
   b. staple length
   c. grade
   d. strength
2. The over-all increase of neps in carded yarn after it has been carded is about:
   a. 30%
   b. 95%
   c. 140%
   d. 200%
3. At 60% r.h. and 70° F., Dacron polyester fiber has a moisture regain of:
   a. 0.4%
   b. 1.2%
   c. 4%
   d. 6%
4. After drying, rayon cakes should retain moisture of about:
   a. 1 to 2%
   b. 5 to 7%
   c. 7 to 9%
   d. 13 to 15%
5. In 1950, mechanical methods were used to harvest what percentage of the cotton crop?
   a. 15%
   b. 35%
   c. 55%
   d. 75%
6. A stroboscope can be used to check:
   a. card settings
   b. waste removal
   c. spindle speeds
   d. uniformity of yarn
7. The Fayolle-Ancet loom, recently exhibited at the Lille Textile Show, is a:
   a. knitting loom
   b. circular loom
   c. rug loom
   d. jacquard loom
8. The new Uster strength tester can make breaks at the rate of about:
   a. 50 per min.
   b. 120 per min.
   c. 260 per min.
   d. 400 per min.
9. From staple length, fiber strength, and fiber fineness of cotton, you can predict:
   a. nep counts
   b. yarn uniformity
   c. waste percentage
   d. yarn strength
10. Clearer waste in the card room should be picked:
    a. at the doff
    b. once a week
    c. every month
    d. during the doff

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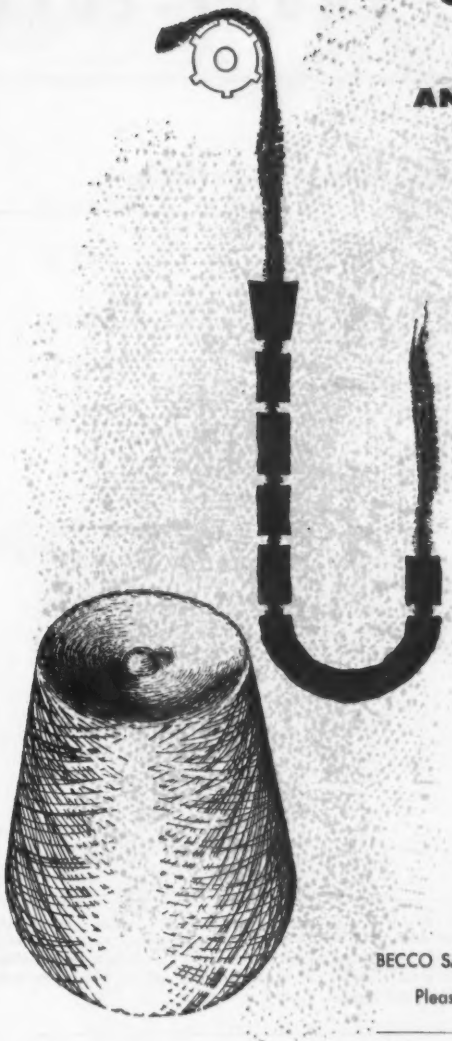

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Jig Bleaching
Tub Bleaching
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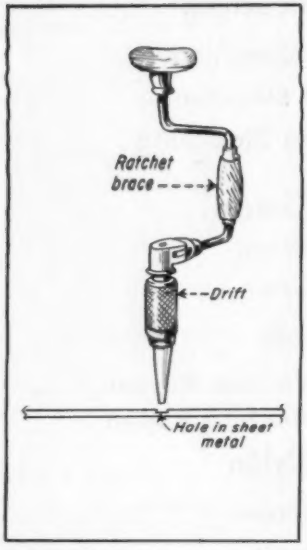
Kinks AND SHORT-CUTS

How We Make Threaded Holes in Thin Metal Sheets

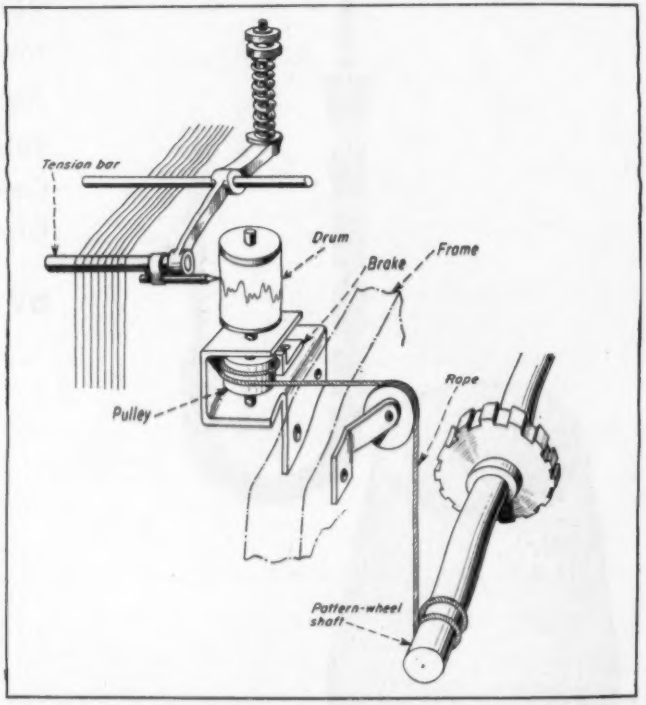


BY USING A DRIFT to enlarge holes in sheet metal you can get a surface that can be tapped with three threads.

If you tap a thin metal sheet, sometimes you can get only one thread in it. With this tool, we get at least three threads in the thin sheet, and here's how we do it.

We drill a hole about half the required diameter and use a tapered drift to enlarge the hole. The small end of the drift is large enough to just fit the drilled hole, and it tapers to the diameter you want the finished hole to be. Put the drift in a ratchet brace; and as you are enlarging the hole, keep the drift well lubricated with thick oil. The drift will force the metal around the hole out so that when it is tapped, the hole will have at least three threads. W. E. Warner, England.

Our Recording Device Checks Tricot Feeding



THE BALL-POINT PEN fastened to the tension bar records the feeding cycle of the machine on the recording drum. The drum is rotated by movement of the pattern-wheel shaft. As the pattern-wheel shaft turns, the rope that is fastened to it pulls the recording-drum pulley around. The brake is made from leather or other suitable material to resist this movement to a predetermined degree.

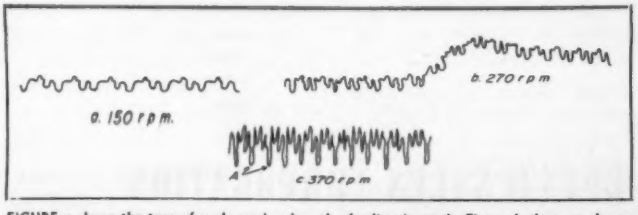
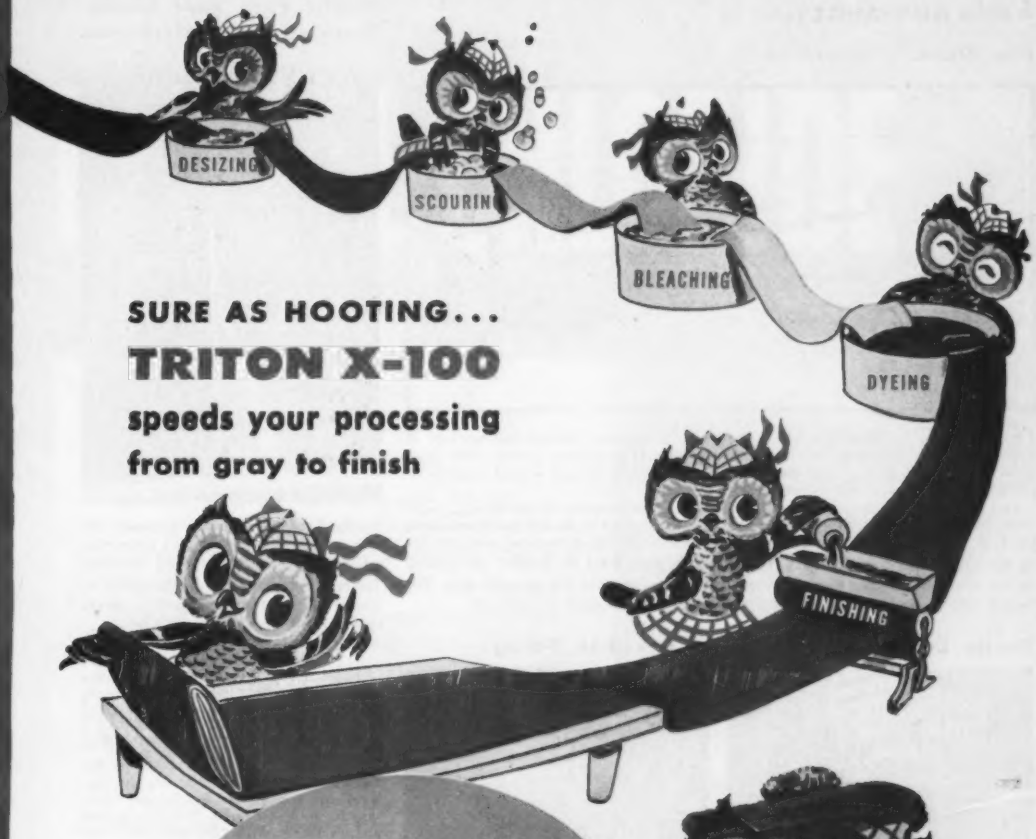


FIGURE *a* shows the type of cycle made when the feeding is good. Figure *b* shows a change in warp tension and tension-bar position. Figure *c* shows the cycle made if tension is too low. Point A is a point of little or no tension. Minoru Uno, Japan.



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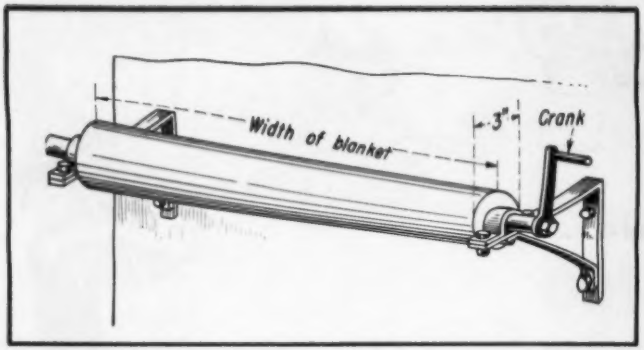
Kinks AND SHORT-CUTS

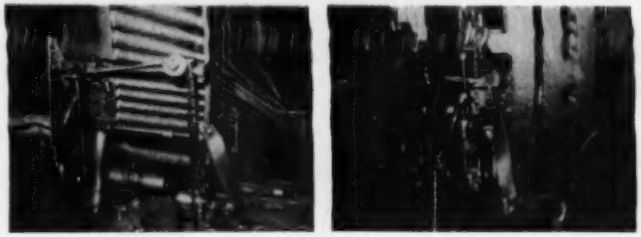
Fire Blankets Stored on Reel



THIS REEL keeps fire blankets in good condition for prompt use. Blankets that are kept in folded form take considerable time to get into position when they are needed. They often show wear and leak at the folded places. Fire blankets should be kept in good condition to prevent water damage to stock and equipment.

Four or more of the thin plastic-coated blankets can be rolled-up on one of these reels. These light-weight blankets are being used in many mills instead of the heavier rubber-coated blankets. They are said to be as effective as the heavier blankets in shedding water. To roll up the blankets, use the hand crank shown in the diagram. When the blankets are required for use, it is only necessary to grasp the end of the blanket on the reel and walk away. The blanket unrolls from the reel and is ready to be placed over the stock or equipment.

Device Designed To Eliminate Jerked-In Filling



THIS DEVICE was designed to eliminate jerked-in filling on C & K looms. Here's how it works: When the loom is in motion, the shuttle feeler is in a raised position. When the bobbin in the shuttle is exhausted, the upright slide will pull the arm to prevent transfer, the connector to the shuttle-feeler holder, and the shuttle feeler into a down position and open the cutter knife. The cutter knife is connected by chains to the arm on the preventer shaft. When the lay moves to the front of the loom, the shuttle feeler will strike the back of the shuttle box and push the shuttle feeler to a raised position. This action closes the knife in the cutter. Grady Parham, Louisville, Ky.

Best-Kink Award for July

Each month TEXTILE WORLD awards $25 to the submitter of the kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the kink appears.

The best kink for July, according to TEXTILE WORLD reader-judges, was:

"Roving Reel Used As Twist Tester"

By J. B. Boyter
Albertville, Ala.

Mr. Boyter is being sent a check for $25 with the compliments of TEXTILE WORLD.

Plastic Film Tape Marks Trucking Lanes, Safety Areas

FLOOR STRIPES made with a plastic film tape are said to outwear by five times other sprayable or brushable stripping materials. The tape can be used in different colors to identify specific floor areas and it can be applied by your own maintenance men.

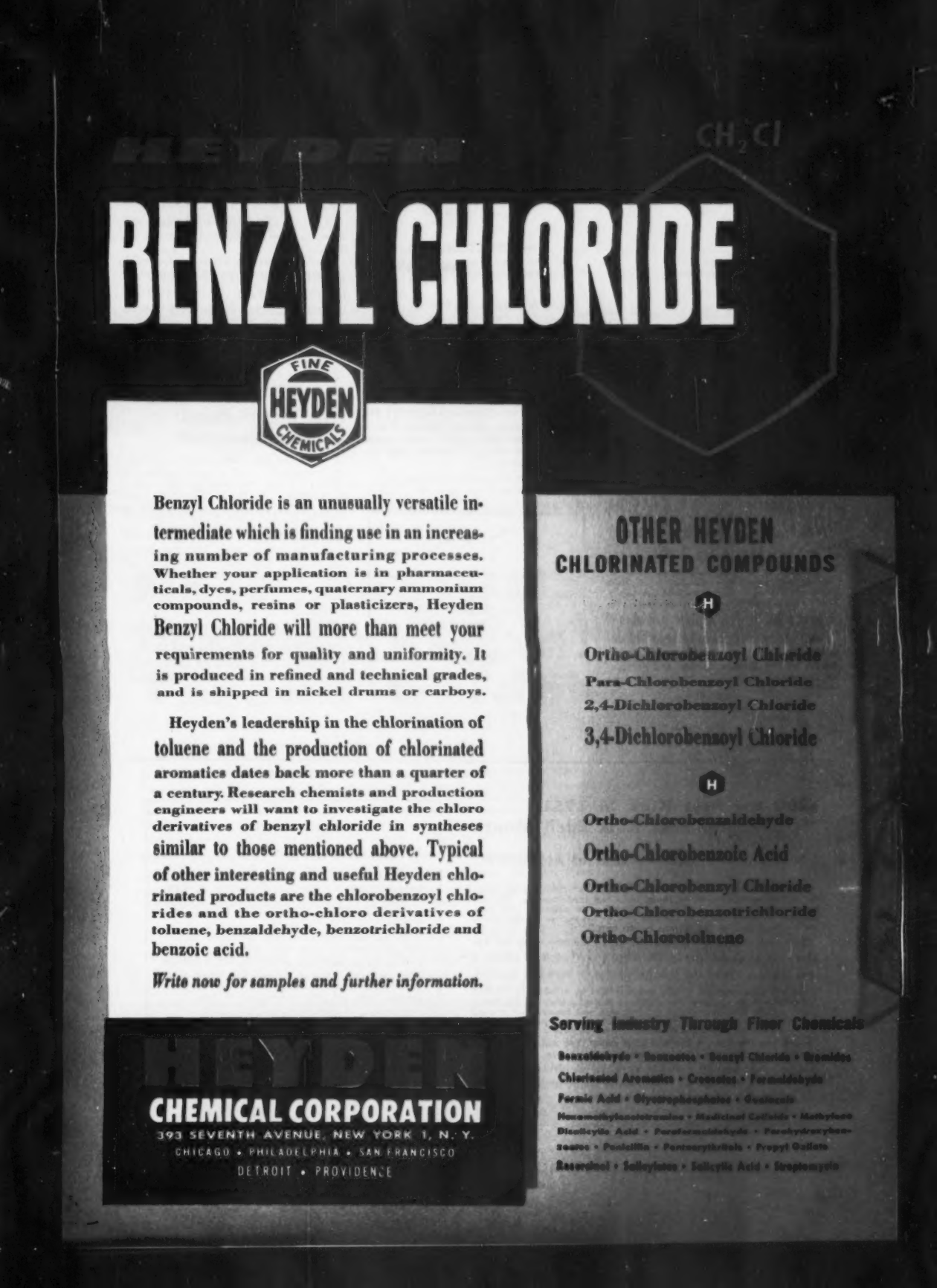
Floor-stripping tape is said to have many advantages. Minnesota Mining & Mfg. Co., St. Paul, Minn., has announced that "Scotch" brand plastic film tape No. 471 is available nationally from paper, mill supply, and hardware jobbers in 2-, 3-, and 4-in. widths on 36-yd. rolls. Tests show that stripes made with this tape will outwear other sprayable or brushable stripping materials five times.

The tape is said to be resistant to acids, alkalis, water, salt water, alcohol, and hydrocarbons. Marked-off areas made with this tape can be altered without leaving traces of the former stripe. Damaged areas are said to be repaired or replaced with extreme ease. The tape does not form a floor ridge because it is only 4 mils thick. The tape is available in seven colors to help identify specific floor areas. The tape is said to grip immediately upon contact.

Chalk on Oily Belt

With the belt running, sprinkle powdered French chalk on the working surface of the belt. The chalk will stick to the belt and work into any cracks there may be in the belt face.

Sprinkle on as much chalk as needed to absorb all the oil in the belt. Then clean the oil-soaked chalk off with a vacuum pipe. W. E. Warner, Essex, England.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Heyden's leadership in the chlorination of toluene and the production of chlorinated aromatics dates back more than a quarter of a century. Research chemists and production engineers will want to investigate the chloro derivatives of benzyl chloride in syntheses similar to those mentioned above. Typical of other interesting and useful Heyden chlorinated products are the chlorobenzoyl chlorides and the ortho-chloro derivatives of toluene, benzaldehyde, benzotrichloride and benzoic acid.
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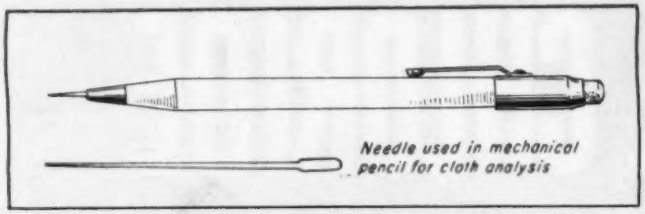
Kinks AND SHORT-CUTS

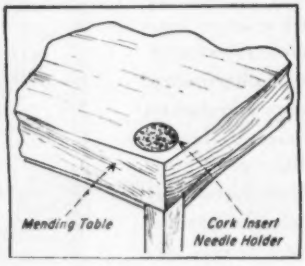
Needle Held in Mechanical Pencil Used for Cloth Analysis



I USE AN ORDINARY SEWING NEEDLE mounted in a mechanical pencil to dissect cloth when I make analyses. I made this tool because it is handy to carry in my pocket, and the point of the needle can be protected. I selected a needle that fits easily but snugly into the hole where the lead is usually inserted. Then I retract the plunger of the pencil and insert the needle. I push the needle into the pencil until the point extends out where I want it. When I am not using the needle, I retract the plunger and press slightly on the needle point until it is all the way in the pencil. If you have a needle that is a little too small, you can make it fit snugly with a fine yarn threaded through the eye.

We Made a Needle Holder On Our Mending Tables

WE DRILLED a ⅞-in. hole in our mending tables and inserted a standard cork flush with the top of the table to hold our menders' needles. A thin coating of shellac or cement holds the cork in place; and when it is worn out, the cork can be replaced with another one. The cork provides a very handy holder for the menders' needles, and damage of the needle point and table top are prevented.



Here Are Two Ways To Replace Stud On Dobby Jack

1. Drill a ¼-in. hole in the jack and rivet the stud in place. The stud costs 10¢.

2. Get a carbon block from a welding-supply house, and drill a ¾-in. hole in the block. Place the block over the worn-out stud and fill the hole in with weld. The block acts as a mold. Reshape the stud with an end miller that will fit a ¼-in. electric drill. Mill the stud to its original shape. C. R. Batzer, Lancaster, Pa.

Flyer Wear Reduced In Coarse-Goods Mill

Flyers on our roving frames that are on coarse work tend to wear excessively if they are not removed and lubricated on a regular schedule. The back lines of flyers are not removed and wiped on each doff as flyers on fine goods are done. Therefore, every Monday morning on the first doff, we remove all flyers and wipe the inside of the flyer top with a common spindle oil. We also wipe off and oil the top of the spindle.

When these parts are properly lubricated, friction is cut down and the flyers do not become loose on the spindle as a result of excessive wear. William Shaw, Providence, R. I.

$200 for Best Kink in 1951
$25 for Best Kink Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know of many kinks and short-cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your kink may win the $200 check for the best kink of the year or the $25 check for the best kink of the month; maybe both!

Send in your kink now. There is always a contest going on. The more good kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it—we will pay you extra if you do and we can use it.

Look over the kinks in this and other issues. You will get ideas you can use as well as inspiration for kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published kink will be judged impartially by other mill men. In case of ties, duplicate prizes will be awarded.

RULES OF CONTEST

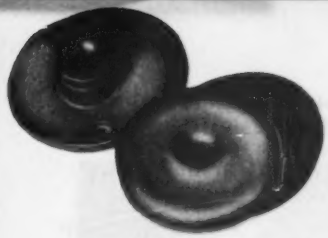
1. No limit to number of entries.
2. New $25 prize contest every month. $200 prize contest for the year. Monthly contest confined to kinks published that month, yearly to those published in calendar year 1951.
3. All kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred kinks in each issue. Their votes will select the best kink, and their decision will be final.

Send kinks to whichever address you prefer:

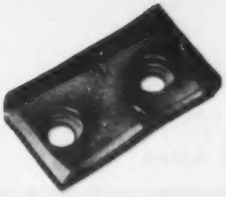
TECHNICAL EDITOR, TEXTILE WORLD
330 W. 42nd St., New York 18, N. Y.

SOUTHERN EDITOR, TEXTILE WORLD
367 Ridgewood Ave., Charlotte, N. C.

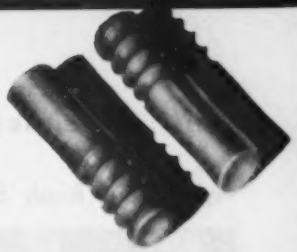
NEW ENGLAND EDITOR, TEXTILE WORLD
P. O. Box 305, Salem, Mass.



GE-19123
Lower price. Balloon Eyelet for Reiner Warp Creel.



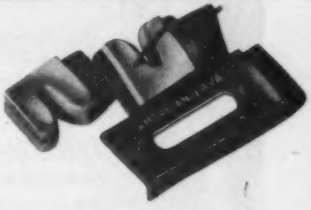
GE-24723
Foster Base Plates. Give longer life and greater dimensional accuracy.



GE-24643
Snub Guide with multiple grooves to keep yarn strands separate.

GE-24476
Acme High Speed Spooler. Accurate dimensions with 1/32" slot for yarn.

GS-24766 Stop Motion Finger for Circular Knit Machines. Improved design and greatly reduced cost.



GS-20201
Winder and Redraw Guide. Guard keeps yarn confined in slot.

NEW DESIGNS
AND IMPROVEMENTS IN AlSiMag
Thread Guides

Since AlSiMag thread guides are custom made, you can get exactly the type of guide you need for your specific requirements. If we do not already have a design that precisely meets your needs, we'll gladly work with you to develop one. Improved designs and methods to reduce costs are constantly studied. Our experience gained in several thousand experimental designs can help you. All AlSiMag guides are hard, homogenous, extra-long lived, dimensionally accurate and uniform. They can be furnished in bright or satin finish. Special hand made samples furnished promptly at reasonable cost. Samples from our files sent without charge. Test AlSiMag guides and you'll see why we say they are lowest in cost per pound of yarn processed.

AMERICAN LAVA CORPORATION
50TH YEAR OF CERAMIC LEADERSHIP
CHATTANOOGA 5, TENNESSEE

NEWARK • CHICAGO • PHILADELPHIA • LOS ANGELES • CAMBRIDGE • ST. LOUIS

GE-24909-A
Tension Disc. FLAT and exceptionally long wearing. Ground surfaces.

GE-24499
Compensator Eye. Well rounded heavy radius yarn surface, highly polished.

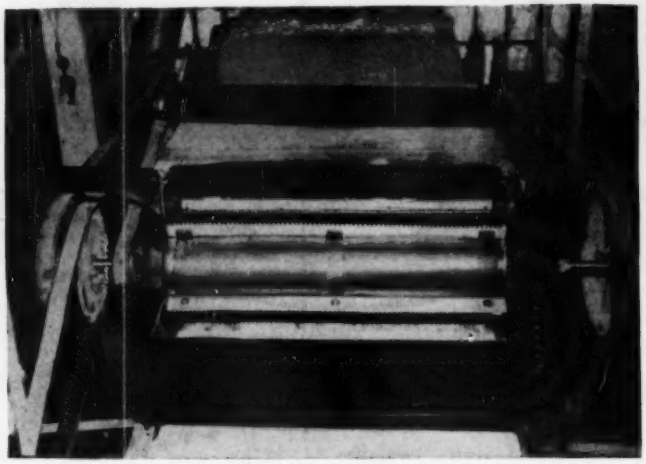
GE-24446
Abbott Eyelet for Quill Winder and Detector Eye. Slotted for spring clip—keeps eye from turning or jumping out.

GE-21794
Universal Coning. Guide with wider slot. For heavy denier yarns.

GE-24244
Quiller Eye. Yarn can not jump out yet price is lower.

Kinks AND SHORT-CUTS

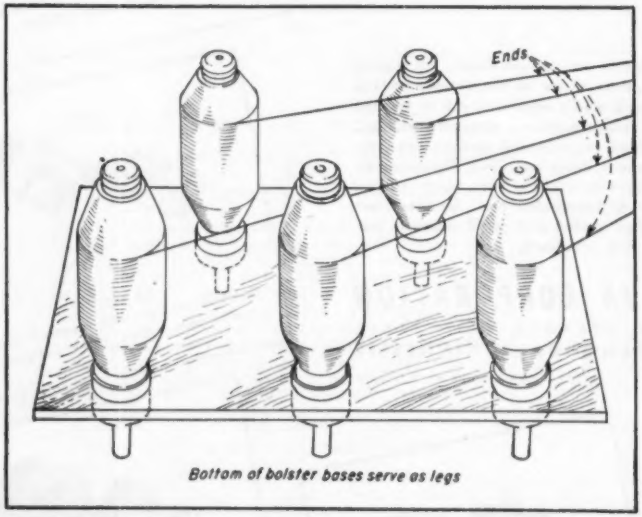
Nylon-Filled Brush Strips Spiked Apron



WE HAVE REPLACED THE LEATHER on the spiked apron strippers in our blending feeders with nylon-filled brushes. The initial cost of these brushes is not too high, and we estimate that they will run from two to three years without being changed. The brushes not only keep the cotton stripped from the spikes but clean the canvas as well. When the brushes become worn or bent, they can be turned around and run on the opposite side.

M. D. Holmes, Quitman, Ga.

Wool Yarn Reeled From Spindle Board



WITH THIS SPINDLE BOARD, we are able to reel off skeins to weigh runs without the yarn breaking or becoming kinked up. The yarn packages rotate easily because each holder is made from a standard frame spindle, bolster, and bolster case. The spindles are mounted 6½ in. apart, which is the gauge of our frames. The board is 17 in. long, 11½ in. wide, and ¾ in. thick. William G. Liske, Stafford Springs, Conn.

Colored Cellulose Bands Used To Identify Bobbins

"CEL-O-SEAL" CELLULOSE BANDS, manufactured by E. I. du Pont de Nemours & Co., Wilmington, Del., have been used for years on bottled household goods. *Du Pont Magazine* reports that these bands were used successfully on a large-scale test of a special yarn at the Du Pont nylon plant, Martinsville, Va.

A quick, easy identification method was needed to keep the special and standard nylons separate. Here's what the plant manager told the *Du Pont Magazine* editors:

"First, we thought of a tape for the end of the bobbins, but that would come off too easily. Besides, the yarn might have tangled in it. Painting the bobbins was another choice, but it's too permanent. Then 'Cel-O-Seal' bands were suggested, and they filled the bill exactly. When we complete the test, we'll remove the bands and the bobbins will be O. K. for general use again."

Over 20 standard colors are available in "Cel-O-Seal" bands. They are put onto the ends of the bobbins by a simple hand operation. They are wet when they are put on, and they shrink in place as they dry.

Soak Glued Felt Off Steel Rolls

Pressure-roll felt is glued to the steel rolls. A good way to remove the felt when the pressure rolls need recovering is to soak the covered rolls in water. A long metal pan can be used as a soaking tank. Cold water will do the job, but, if a steam line can be run to the pan and the water heated, the felt will come off quicker. Either an open or closed line can be used for this purpose. H. E. Wenrich, Berwick, Pa.

Superior light and wet fastness

for **NYLON**

DU PONT "CAPRACYL"* neutral dyeing colors—designed specifically for nylon—give both filament and staple nylon decidedly superior light and wet fastness. And they can be applied in the same short time cycle as acid dyes.

The "CAPRACYL" dyes—such as Orange R—are especially recommended for dyeing nylon staple in stock, top or tow form. The dyed staple can then be converted into those fabrics requiring superior light and wet fastness—such as beachwear, outerwear, infants' wear, shirtings, upholstery materials, etc.

"CAPRACYL" dyes are also suitable for dyeing wool, giving similar fastness properties.

For information on these new "CAPRACYL" dyes . . . or for help on any coloring problems . . . consult our Technical Staff. E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Division, Wilmington 98, Delaware.

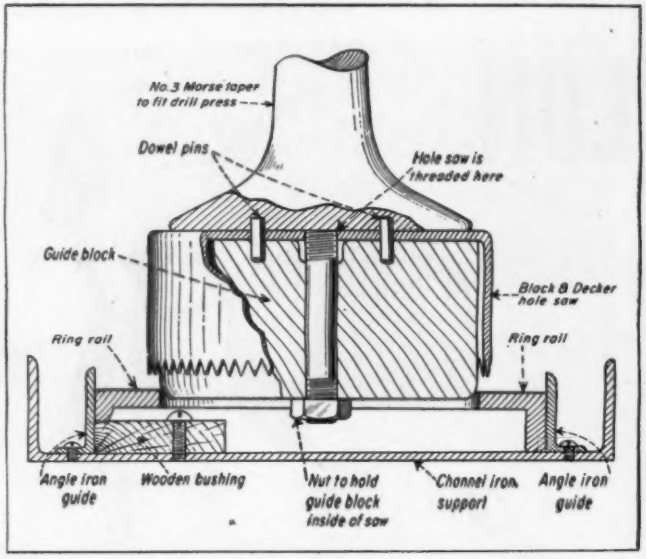
*TRADE MARK

DU PONT
REG. U. S. PAT. OFF.

Du Pont Dyestuffs

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

Out Cutting Tool Enlarges Ring-Rail Holes in 45 Sec.



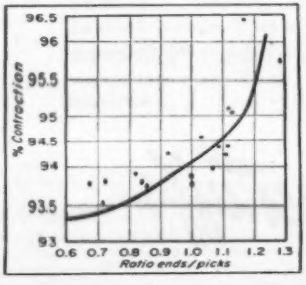
THIS SUPPORT helps in enlarging ring-rail holes. We get a much smoother job in less than half the time required by a reamer.

We enlarge ring-rail holes with this cutting tool on a drill press in our shop. We take the ring rail to the shop and mount it in a channel-iron support that is twice the length of the ring rail. The extra length is needed so that the rail will be well supported on the press. Angle-iron guides hold the ring rail in place, and a wooden-block support is put under the side of the rail that has the short flange so that the rail will be level.

The cutting tool consists of a hole saw of the same diameter as the hole to be cut in the ring rail; a guide block that is $\frac{1}{8}$ in. smaller than the old ring-rail hole and tapered at the bottom to guide the tool into the hole; and a number =3 Morse taper to fit the drill press. The guide block is fastened to the saw with a bolt and nut, and the saw is held to the taper with dowel pins and a bolt.

We have just finished enlarging some holes from $2\frac{1}{2}$ in. diameter to $2\frac{7}{8}$ in., and we got a much smoother job than we used to get when we used a reamer. When we used a reamer, it took us about 2 min. to enlarge each hole. The job is done so quickly with our new cutting tool because the operator simply slides the rail from one hole to the next without having to make any new adjustments. Also, there is much less likelihood of breaking a rail when this tool and support are used. Edward C. Horner, Coleridge, N. C.

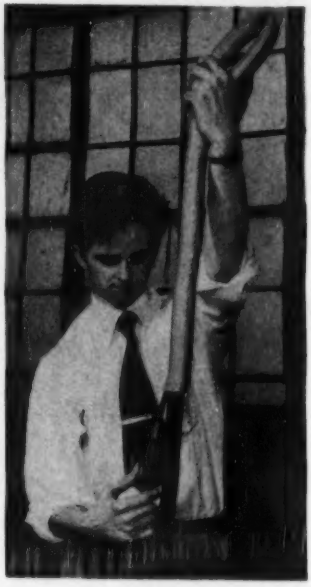
Here's How We Find Reed Width for Any Cloth Width



THIS GRAPH was plotted from figures obtained from plain fabrics woven in quantity over a long period of time.

Find the ratio of ends to picks by dividing the number of ends per inch by the number of picks per inch in the fabric. Locate this figure on the bottom of the graph and follow it up until it cuts the curve. Read the percent contraction on the vertical scale at this point. Divide the fabric width required by the contraction, and the answer will be the reed width that you need.

Use Air Hose To Put Tubing On Presser Roll



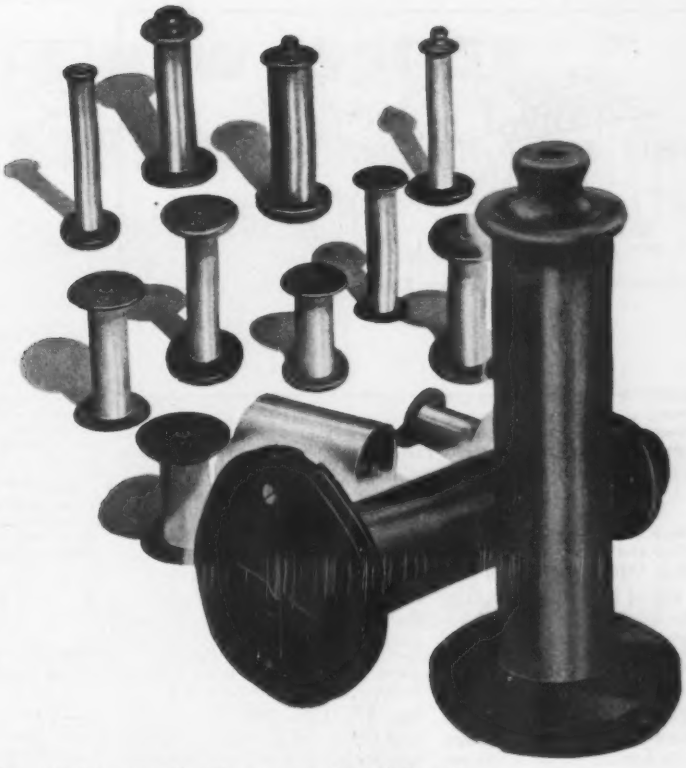
NEW PRESSER-ROLL TUBING, manufactured by U. S. Rubber Co., is put on the presser roll with an air hose. The tubing is applied to the roll in this way. Start one end of the tubing on the shaft, inflate the tube as shown in the picture, and slide the tube on the roll.

This tubing can be used on all types of looms and is supplied with 3/16 in. wall thickness. The manufacturer states that any inside diameter can be specified in loom width or continuous roll lengths. It is said to be resistant to dyes, oils, and acetate.

Here's a Stop Motion for Warp-Knitting Looms

Breaks in warp-knitted fabrics are caused by yarns missing from the warp itself or by yarn breaks at the knitting points. I have observed that yarns that break at the guides swing in the air before they are caught by nearby needles.

A photoelectric cell can serve as an effective stop motion in this way. Mount the output and reception cells at the ends of each guide bar at such a height that the needles will not obstruct the line of light. As a yarn breaks, the swinging of the yarn will register at the photo electric cell and cause the machine to be stopped immediately. Lawrence Prelog, Sydney, Australia.



Want a real "buy" in synthetic yarn bobbins?

If you are looking only for a bargain price this advertisement won't interest you at all.

But if you want an honest return for the money you invest in synthetic yarn bobbins, we may have the answer.

Featured in the illustration above is a down-twister bobbin. The surrounding bobbins and pirns are for a variety of other purposes. All of them have one thing in common—all are made from Synthane laminated plastics.

Synthane is non-metallic, light in weight, hard, dense, almost indestructible—even with rough handling. Synthane is moisture resistant and dimensionally stable, too. More important to you, it has a super-smooth surface that is extra-gentle to your valuable yarns.

We make these bobbins and pirns to hair's breadth accuracy by precision methods. Then each bobbin is checked carefully for dynamic balance, resulting in lower spindle maintenance and reduced power waste.

These are the reasons why textile men willingly pay more for Synthane bobbins and pirns.

Incidentally, there are many more Synthane products for textile applications—from non-snagging hosiery examining forms to corrosion-resisting pipe for nylon sizing machines. We have a folder picturing and telling about these other Synthane textile uses. Send for it. Textile Division, Synthane Corporation, 50 River Road, Oaks, Pennsylvania.

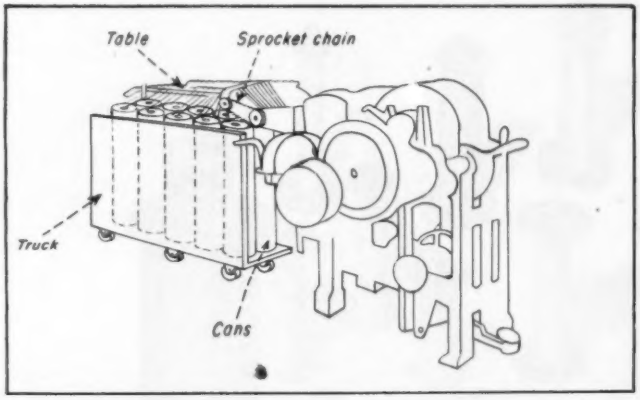
PLASTICS WHERE PLASTICS BELONG

SYNTHANE

Manufacturers of laminated plastics and parts for the textile industry

Kinks AND SHORT-CUTS

We Use a Truck To Doff and Creel Card-Sliver Cans



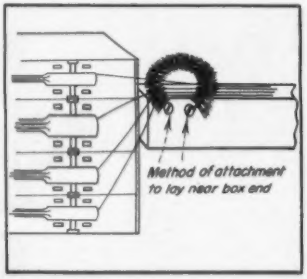
EACH TRUCK is made to handle 10 sliver cans, 5 in length and 2 in depth. Cards are doffed directly onto the trucks. When the sliver lapper needs to be creeled, a truck is pushed into place and the ends are creeled from the cans still on the truck. We had to raise the table of our sliver lapper to accommodate the trucks.

We have found that we can make our card job and sliver-lapper job easier with trucks that handle enough cans for one side of the sliver lapper. The trucks handle 10 cans each and are constructed so that the beds are 3 in. above the floor.

When the card operator is ready to doff, he pushes the truck with 10 empty cans on it down the alley and doffs directly onto the truck. Since all cans are handled on the trucks, we are able to keep our floors in better condition.

We raised the tables of our sliver lappers to accommodate the truck. We put a block under the back legs 8 in. high and 4 in. wide, and we moved the table back from the head 6 in. to keep the sliver from having to make a 90° drop from the table to the head. We made two supports from angle iron to support the table and connect it with the draw box. A piece of tin between these supports forms a table for the sliver to slide on. We lengthened the sprocket chains to reach their respective sprocket gears on each side of the machine. Since the sliver table has been raised 8 in., the sliver is pulled from the top of the can and does not drag against the side. Duke Kimbrell, Gastonia, N. C.

Brush Keeps Filling From Tailing In

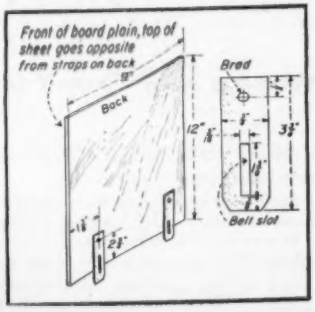


THE TOP HALF of a circular brush makes a good attachment to keep filling from tailing in.

After the brush is cut off near the bristles, it is twisted into a round eye at each end to accommodate a wood screw. Attach the device to the front of the lay near the mouth of the boxes.

Filling from shuttles in the idle boxes will not be pulled into the fabric. It will adhere to the bristles. The brush must be placed out of the path of the shuttles and must not interfere with shuttle transfers.

We Use a Recorder Board That Leaves Both Hands Free



THIS RECORDER BOARD can be suspended from your belt and leave both of your hands free to record speeds, tests, or other data. It is ideal to use when you need to use both hands to perform an operation.

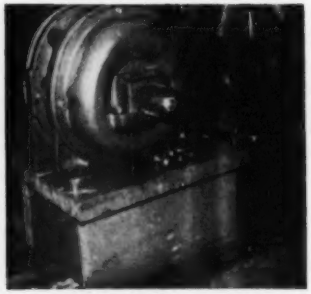
The board is a 9x12-in. piece of shellacked ¼-in. ply board. Record forms or sheets can be fastened to the board with thumb tacks or "Scotch" tape. The two slotted leather straps have embedded brads, and the board is suspended from your belt by these straps. It is small enough not to hinder free movements when you are recording data on it, and it holds standard-size paper that will fit in a standard filing cabinet. Joe Helderbrand, Langdale, Ala.

We Use This Wooden Stand To Remove Loom Motors

The drive motor must be removed to repair or replace some parts on the W2 and W3 looms. We made this wooden stand to make the removal easier and to prevent damage to the electrical cable.

The stand is made of 1¼-in. lumber, and the top boards extend over each of the sides about 2 in. for easy handling.

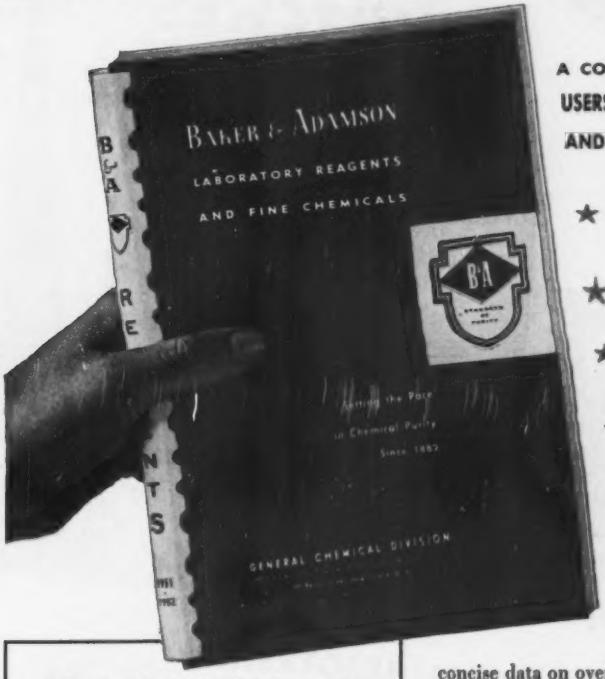
The height of the stand is the same as the height of the motor table. When we remove a motor, we place the stand beside the motor; and after the motor bolts are removed, we slide the loom motor onto the stand and push it out of the way. Eugene P. Schremp, Fulton, N. Y.



THIS WOODEN STAND prevents damage and gets the motor out of the way when certain repairs are made on W-2 and W-3 looms.

Announcing...

THE BIG NEW 1951-52 B&A CATALOG of Reagents & Fine Chemicals



A COMPLETE BUYERS' GUIDE FOR USERS OF LABORATORY REAGENTS AND FINE CHEMICALS

- ★ For Manufacturing Control Laboratories
- ★ For Production Requiring Quality Chemicals
- ★ For Process Planning and Development
- ★ For Research Laboratories
- ★ For Educational Laboratories

Just off the press—Baker & Adamson's new 1951-52 Catalog is profusely illustrated . . . packed with 264 pages of important information. Gives clear, concise data on over 1,000 B&A Laboratory Reagents and Fine Chemicals! Includes such pertinent facts as grades, strengths, maximum limits of impurities, etc. If you buy or specify laboratory reagents, this new 1951-52 B&A Catalog belongs on your desk. Send for your copy today.

Packed with helpful information

STORAGE AND HANDLING: Special section gives helpful "do's and don'ts" on handling chemicals that require extra precautions.

PACKAGING SECTION: Exclusive new feature—photographs and full details on major B&A packaging, including:...the "PBL" Drum with polyethylene liner, the 9-bottle case for reagent acids, the 6-½ gallon carboy, the "Saftepak" plastic dispenser for HF, and many others.

EXTENSIVE DATA: Over 230 pages of specifications, other pertinent data on B&A Reagents, also on many Fine Chemicals.

Write Today Fill out coupon, attach to your business letterhead and mail today. Free to all qualified users and buyers of reagents.

BAKER & ADAMSON PRODUCTS, General Chemical Division
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

Please send me your new 264 page catalog of Baker & Adamson Reagents and Fine Chemicals for 1951-52.

Name_____

Organization_____ Position_____

Address_____

City_____ Zone____ State_____

13-9

SQUARE D's

DESIGN LEADERSHIP

SAFETY SWITCHES

TYPES A*, C and D
30, 60, 100 and 200 Amp. Sizes

40 YEARS DESIGN LEADERSHIP

Is reflected in the many design and operating features of this completely new line

Type A switches have full interlock, visible blades and magnetic arc plate as well as a simple, quick-make-and-break mechanism, dead front line terminals, positive pressure fuse clips, multi-spring jaws, silver-plated current carrying parts and removable pressure connectors.

*Types C and D resemble Type A in appearance but differ in construction details

Write for Bulletin 3100 for further details. Square D Company, 6060 Rivard Street, Detroit 11, Michigan

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

SQUARE D COMPANY CANADA LTD., TORONTO • SQUARE D de MEXICO, S.A., MEXICO CITY, D.F.

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MILL EXECUTIVES may obtain free for the asking . . .

. . . OUTSTANDING TRADE LITERATURE reviewed on the next and following pages

. . . FURTHER INFORMATION on
New Textile Equipment
New Dyes & Chemicals
New Useful Accessories
Editorial Articles
and the Advertisements

WRITE ON THIS CARD

. . . to send a Kink, a letter for Round Table, or a news note

. . . to comment on anything appearing in this issue

. . . to query the editors about any manuscripts you might wish to submit to them

. . . to send an inquiry to the Questions & Answers department

●

Cards require no postage . . . but be sure to give your name, title, mill connection, and address (particularly essential in the case of the bottom card).

●

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. . . to request copies of trade literature described on the next and following pages or to get more information on New Useful Accessories described in this issue

WRITE PAGE NUMBERS

. . . to get more information on any piece of equipment described in the Textile Equipment News section. Where more than one item appears on the page, see table of contents on page 3 to obtain an identifying letter which also must be included

. . . to get more information on editorial material appearing on any page in this issue

. . . to get more information about advertisements appearing in this issue

(If more than one editorial item or advertisement appears on a page, identify the one in which you are interested.)

Dear Editor SEPTEMBER, 1951

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NEW EQUIPMENT on page (give page number and identifying letter which can be obtained from the table of contents on page 3) .....

.....

ADDITIONAL INFORMATION ABOUT THE ARTICLES ON PAGES: .....

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Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for September are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

A special cone winder—type KM—for cotton, woolen, worsted, spun rayon, spun silk, and blended yarns is described in a booklet prepared by American Schweiter Co. Speeds of 200 yd. per min. from cop to cone and 200 yd. per min. from hank to cone are claimed for the cross-winding machine. **(F-1)**

Uptwisters for packages of 2 lb. net wt. are described in a bulletin issued by Platt Bros. Ltd. The uptwisters are recommended for pretwisting low-twist yarns and for uptwisting of large packages with as much as 70 t.p.i. **(F-3)**

The take-up end of a sizer is discussed in a folder published by Charles B. Johnson. Steel tracks across the sizer width support bearing frames and are said to eliminate sag or vibration. **(F-5)**

A warp-knitting loom that features high speeds with a range of 22 to 34 gauge is shown in a flyer available from Alfred Hofmann & Co. The tricot machine is available in widths of 84, 112, 140, and 168 in. **(F-4)**

How to change patterns on their Vari-Pattern hosiery-knitting machine is described in a booklet published by Hemphill Co. You can also find out how to put the new pattern on the machine. **(F-6)**

A tricot knitter that has a new yarn let-off motion and cloth take-up device is described in a folder from Whitin Machine Works. Other features of the high-speed machine include a quick-stop control of the non-reversing type and an electrical inching device. **(F-6)**

"Eliminate pressing costs" — that's what a folder from American Safety Table Co. says. The Amco conveyor press described folds, conveys, presses, and packages in one operation. Savings up to 4c per doz. are claimed possible for the knitted underwear trade. **(F-7)**

Automatic wrapping machines for packages 4¼ to 9 in. wide, 8 to 11 in. long, and ¾ in. deep are shown in a folder issued by Hayssen Mfg. Co. Other machines are available for other wrapping ranges. **(F-8)**

A presetting box for nylon hosiery is the subject of a bulletin from Hydon Bros., Inc. Completely automatic, the device is available for operation on low-pressure steam, electricity, or a combination of both. **(F-9)**

AUXILIARY EQUIPMENT

If you're interested in instruments, you'll like the centennial issue of *Taylor Technology*, publication of Taylor Instrument Cos. Each of their products is pictured and described—from automatic controllers to venturis. **(F-10)**

Electrical equipment for textile finishing is described in a booklet available from Westinghouse Electric Corp. The booklet tells what factors affect the selection of drives for continuous ranges. A simple diagram shows how Mot-O-Trol works. **(F-11)**

Tension controls are shown in a folder prepared by Walter Kidde & Co., Inc. Five types of tension compensators are described, and seven kinds of input guides and control arms are shown. **(F-12)**

The Lubricator—a method of eliminating troughs and wicks in the treatment of nylon yarns—is pictured in a flyer put out by Reading Testing Laboratories. The new method uses only one wetting solution for all yarns—sized or unsized. **(F-13)**

A stitch gauge said to cut average stitch-setting time from 4 hr. to 12 min. is described in a folder published by The Knitmaster Co. The improved model has a double-indicator hand. The device sets the draw of the stitch on all types of latch-needle machines. **(F-14)**

Air-operated, diaphragm-motor valves for use with either narrow-throttling-band or on-off instruments are described in a data sheet from Minneapolis-Honeywell Regulator Co. Dimensions of ¼- to 2-in. models are given in a table. **(F-15)**

SUPPLIES AND CHEMICALS

How many arms on your flyers? Whether you have one, two, three, or four, you'll be interested in a leaflet made available by Herr Mfg. Co. The eccentric part of these flyers is nylon and requires no lubrication. **(F-16)**

Industry's most useful new tool is pressure-sensitive tape, according to a catalog published by Industrial Tape Corp. Five specific textile tapes are described. Did you know that there is one electrical tape that replaces the two formerly used? **(F-17)**

A fungicide and preservative for cellulosic materials—8% copper napthenate—is described in a technical report pub-

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Reader Service (Continued)

lished by Witco Chemical Co. Water-insoluble, the chemical is soluble in petroleum and oil solvents. **(F-18)**

"Measurement of the Adsorption of Anion-Active Detergents by Materials Commonly Washed" is the title of a presentation published by The Solvay Process Div. William A. Fessler authored the report and presented it at a recent meeting of the D-12 committee of A.S.T.M. **(F-19)**

Dypenol, an additive to mercerizing liquor, is described in a booklet issued by Dexter Chemical Corp. Skein, warp, and piece-goods processes are all said to benefit when the penetrant is used. **(F-20)**

Hosiery-carrying trays of aluminum with suede covering are described in a folder published by Horits & Berwick. Each tray holds 12-doz. pairs of hose. **(F-21)**

Laminated plastic products for the textile industry are featured in a catalog from National Vulcanized Fibre Co. Among the products are balloon separators, carrier rolls, dye sticks, bobbins, pot eyes, and tenter rails. **(F-22)**

Two new dyeing assistants are described in leaflets made available by Commonwealth Color & Chemical Co. Veedex is for dyeing Dacron under pressure; Orasist is for Orlon fiber A-3, Orlon fiber stock, and Orlon type 41. **(F-23)**

Heanium—a new material for thread guides—is described in a folder published by Heany Industrial Ceramic Corp. Next in hardness to diamond, the material is homogeneous and is unaffected by concentrated acids and alkalies. **(F-24)**

Four new chemicals are described in a flyer from Richmond Oil, Soap, and Chemical Co.—a sulphur color developer, a dye leveler for nylon, a softener, and a coning compound. **(F-25)**

ENGINEERING AND MAINTENANCE

"Over the Rough Spots" is the title of a pocket-size booklet on bad floor conditions prepared by Stonhard Co. You can find out how to protect both concrete and wood floorings and maintain proper repair with relatively unskilled workmen. **(F-26)**

Painting costs can be cut if you use the right kind of brush on the right surface, according to Baker Brush Co. A new booklet plays up the need for proper cleaning of paint brushes, in addition to the selection data. **(F-27)**

Steam traps for power plants and steam-distribution systems are described in a bulletin issued by Yarnall-Waring Co. There's a wealth of information in the catalog and a good chart to help you determine the size of return lines. **(F-28)**

Large pumps and the application of a.c. motors to them are described in a bulletin issued by Electric Machinery Mfg Co. There is information on the use of induction and synchronous motors—including comparisons of characteristics. **(F-29)**

Twenty booklets on machines and tools are summarized in a folder prepared by Geo. Scherr Co., Inc. Magnifying devices, gear testers, micrometers, gauge blocks, and tachometers form part of the line described. **(F-30)**

Spindle lubrication is one use for a battery-powered lubricating truck described in a folder issued by Brown-Dynalube Co. Called Dynalubricator, the truck dispenses any weight grease. **(F-31)**

Dehumidifiers for instrument air are described in a bulletin published by Industrial Corp. Each unit is equipped for electric regeneration and is for fully automatic or semi-automatic operation. **(F-32)**

How increasing steam costs can save money is described in a booklet issued by

MODERN HUMIDIFICATION

by Walton

-approved for 3-WAY SERVICE!

OK FOR SPOT HUMIDIFICATION

OK FOR BOOSTER HUMIDIFICATION

OK FOR COMPLETE HUMIDIFICATION

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Over 1,000,000 Spindles

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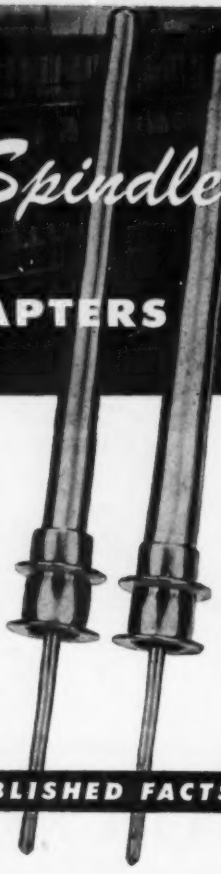

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Because The tried and proven conventional type of standard base, bolster and spindle with a wonderful record in many mills of 20 years or more of low cost operation and maintenance has a larger package and improved spinning with the Regnery Adapter.

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Spindle Adapters · Production · Engineering

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Reader Service (Continued)

Sarco Co., Inc. Sixteen provocative questions are answered in interesting and helpful fashion. **(F-33)**

A 66% saving in man-hours required for cleaning, waxing, and polishing floors is claimed in a bulletin prepared by G. H. Tennant Co. Water or detergents have no place in the new floor-cleaning system described. **(F-34)**

Conveyor-roll bearings that are self lubricating are described in a catalog issued by Arguto Oilless Bearing Co. These wood bearings—for use with driven, belt, or gravity conveyors—are said to require no maintenance. **(F-35)**

Carbon brushes for electric equipment are the subject of a booklet prepared by General Electric Co. Design, application, and manufacture of the brushes is included with information on brush terminology. **(F-36)**

Predicting can be risky—but scientists of Pittsburgh Corning Corp. have prepared a nomograph that tells the amount of daylight that will be present in any room before the building is built. The chart is said to be simple to manipulate. **(F-37)**

Industrial lighting improvements are discussed in a booklet prepared by Westinghouse Electric Corp. Fluorescent, mercury-vapor, and incandescent light sources are analyzed and compared. **(F-38)**

Corrosion resistance of various types of stainless tubing and piping is given in a notebook prepared by The Carpenter Steel Co. Intergranular, galvanic, atmospheric, and pit-type corrosive conditions are described. **(F-39)**

Three hook-on electrical instruments are included in a buyer's guide prepared by General Electric Co. A dozen other testing instruments and their applications complete the guide. **(F-40)**

"Oil-Mist"—the automatic lubrication system that cools and ventilates while it lubricates—is described in a booklet prepared by Alemite Corp. One reading is all you'll need to see how the system works. **(F-41)**

Multipurpose cleaning machines of both the wet and dry varieties are shown in a folder issued by The Kent Co. The floor machines have the motor offset to counterbalance the handle and to counteract torque. **(F-42)**

Fluorescent luminaires for industrial lighting are specified, priced, and described in a folder from The Miller Co. One series has a reflector with holes in the top to allow 10% of the light to go up to help reduce contrast. **(F-43)**

GENERAL

Record-keeping problems under CMP are answered in a booklet made up by Remington Rand Inc. The booklet is based on the record procedures developed by the company during World War II. **(F-44)**

Is your plant ready for atomic attack? Walter Kidde & Co., Inc., has prepared an illustrated booklet on that subject to guide plant management in organizing personnel and in examining plant construction. **(F-45)**

International Correspondence Schools has made available a catalog outlining its courses in textile subjects. Of particular interest is the new home-study course in textile engineering. **(F-46)**

Fiberglas yarns — their processing, specifications, handling techniques, and uses—are discussed in a catalog issued by Owens-Corning Fiberglas Corp. **(F-47)**

Radio and electronic equipment used in the textile industry is included in a 1,053-page catalog prepared by Milo Radio & Electronics Corp. Among the items listed are: communications systems, wire recorders, voltage regulators, amplifiers, loudspeakers, resistors, tubes of all kinds, and test instruments. **(F-48)**

"light soaping is enough!"

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AMBERFLO, a highly soluble printing thickener, deposits a soft print. Light washing rinses it out quickly. Easily. Completely. Using tap water. Result? Happier production men. And fabrics that warm a fashion designer's heart with their softness . . . sparkling color . . . finer hand and body.

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AMBERFLO is recommended for vat, rapidogen, direct, acid and acetate colors. Also white discharge.

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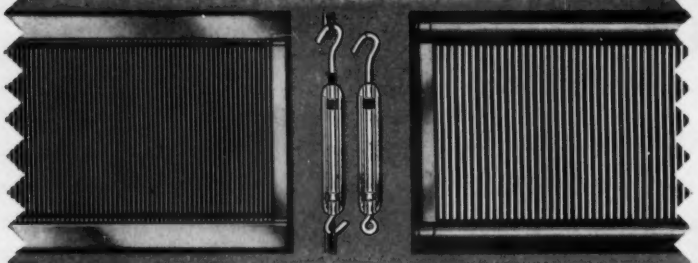
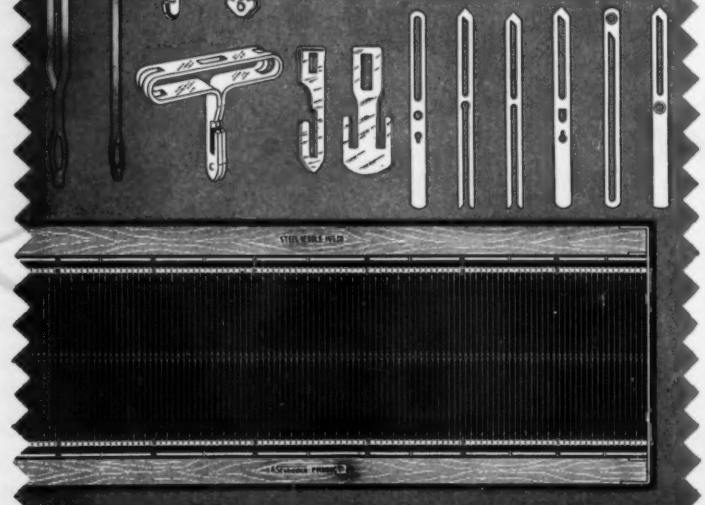
Stehedco and Southern



LOOK FOR
STEHEDCO and SOUTHERN
TRADE NAMES THAT LEAD THE FIELD IN QUALITY

Over 200 U.S. Patent grants justify the pride of this company in its many contributions to the textile industry. Mills the world over know the advantages of the standards in Quality and Service set by the trade names STEHEDCO and SOUTHERN. Tracing briefly the early developments which led up to these standards, they find that the early pioneering efforts of this, now, huge organization, have culminated in accomplishing its many objectives.

Through its constant research and experimentation it has brought about many major changes and improvements in loom harness equipment and will continue to seek future improvements, through constant research and development of new materials, designs, construction and methods.



Products that "Weave the World's Needs!"

Reader Service (Continued)

Moving? Shipping something? Erecting? You'll be interested in the story Turner Transfer, Inc. tells in its descriptive booklet. Facilities in the North and South are described and pictured. **(F-49)**

DO-96—who can obtain one and what it means to you—is covered in a folder made available by Proctor & Schwartz, Inc. There is also some information on the recent DO-97. **(F-50)**

Useful Accessories For Textile Mills

► To request further information on any item, please use the card in the Reader-Service Dept.; refer to the number at the end of the item concerned.

Cement Floor Finish

A special long-wearing cement floor finish called Monorock has been announced by General Floor Co., 110 East 42nd St., New York 17, N. Y. Monorock finish, of low-water ratio, is adaptable to a broad range of commercial and industrial floor locations. The manufacturers point out that Monorock includes a special tough mixture that strengthens the concrete slab surface and penetrates, interlocks, and becomes an integral part of the monolithic slab. Long low-maintenance life for flooring is thus assured. (U-1)

Fractional-Hp. Motor

A new special-service, split-phase, fractional horsepower motor has been announced by Century Electric Co., 1806 Pine St., St. Louis, Mo. The special-service-rated motor has a high starting torque for use where high starting current is not objectionable. Breakdown torque is in accordance with NEMA standard for the basis of rating. Service factor is 1.00. Practically all the features of the company's other fractional-horsepower motors are said to be embodied in the design of the special-service model. (U-2)

Narrow Lift Truck

A new electric lift truck equipped with a narrow lifting platform has been announced by Market Forge Co., Everett, Mass. The width of the platform on the new Load-Mobile truck is only 18 in. The truck can be furnished in 6-, 7-, 9-, and 11-in. lowered heights to engage conventional platforms. The trucks can also

Useful Accessories (Continued)

be built as narrow as 15 in. to meet special conditions. The truck is battery operated and features 3-way operating positions. (U-3)

New Electrical Tape

A new-type electrical tape, made with Koroseal material, is available from B. F. Goodrich Co., Akron, Ohio. Many advantages over ordinary electrical tape are claimed by the manufacturer. The company says that the adhesive used is nontransferring and can be pressed onto a dry surface innumerable times without losing its stickiness. It does not lose its ability to adhere and sticks snugly and securely to itself and to insulation around the wire. Tape dielectric strength is stated to be 8,000 v. The tape is waterproof, flameproof, and highly resistant to abrasion, acids, oil, alkalis, and corrosive salts. (U-4)

Resilient-Base Motors

The Tri-Clad line of single-phase, capacitor, induction motors with resilient-base construction has been announced by General Electric's Small and Medium Motor Div., Schenectady, N. Y. The motor is for use in places freedom from vibration and extra-quiet operation are required. The construction is available on motors rated from ¼ to 5 hp. According to the company engineers, all single-phase motors have some torque pulsation, but the resilient base isolates this vibration. (U-5)

Shipping-Case Sealer

A shipping-case glue called Boxeal has been developed by Paisley Products, Inc., Div., Morningstar Nicol, Inc., 1770 Canalport Ave., Chicago 16, Ill. The sealer is designed to provide a permanent, non-crystallizing bonding of box flaps to reinforce the rated strength of corrugated shipping cases and thus produce a rigidly sealed container that resists stresses and strains both vertically and laterally. The makers claim that boxes of all shapes can be sealed with this improved dextrinized starch adhesive, either by machine or hand brushing, in 20 to 45 sec. (U-6)

Soft Solder Flux

A new liquid-soft solder flux has been announced by Superior Flux & Mfg. Co., 1302 Ontario St., Cleveland 13, Ohio. The Superior # 30 flux, according to the manufacturer, is different from other fluxes because it contains no zinc or ammonium chlorides or acid-forming substances. The flux is claimed to be nonfuming and free from resin, gums, waxes, and petrolatum. Residues left after soldering are said to be noncorrosive, nonhydroscopic, nonconductive, and water-soluble. (U-7)

Surface-Tension Instrument

A new instrument for rapid, easy, and

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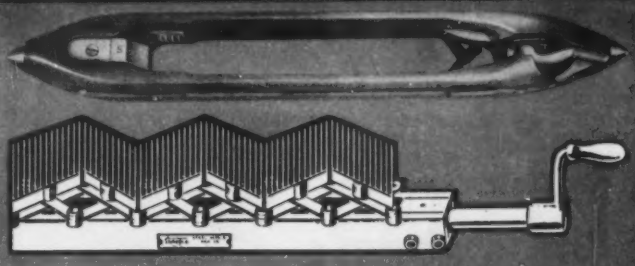
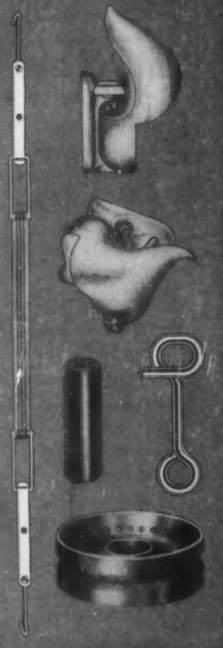
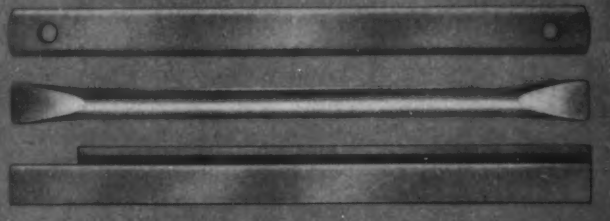


LOOK FOR
STEHEDCO and SOUTHERN
TRADE NAMES THAT LEAD THE FIELD
IN SERVICE

The service obtainable from the loom harness manufacturer is as important to the mill as product quality. The Steel Heddle Manufacturing Company, not content with producing better loom harness equipment and accessories, has made every effort to provide the most efficient and economical distribution and service possible. The location of their many large plants and branch offices has been strategically planned for the benefit of the textile industry.

Competent staffs of Field Engineers are maintained for the express purpose of assisting with mill problems. These men appreciate new applications; they understand what successful product performance means.





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STEEL HEDDLE COMPANY OF CANADA, LIMITED
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Products that "Weave the World's Needs!"

Half a Million More Tons of Steel a Year

for Customers of

Birmingham's

TENNESSEE COAL, IRON & RAILROAD COMPANY

T.C.I.—the South's largest steel producer—is now increasing the annual ingot capacity of its Birmingham steel mills from 2,850,000 tons to 3,350,000 tons. This company is also increasing the production of its nearby Fairfield sheet mill to meet the great demand for such galvanized steel products as roofing and siding. At Mobile, Alabama, it is building an extensive iron ore handling terminal which will serve as a transfer point for high grade imported ores.

Announcing these major developments, Arthur V. Wiebel, president of the company, said:

"Since the start of World War II, our steel mills in Birmingham have been operating in excess of rated capacity to meet the growing demand in our Southern market for all kinds of finished steel products. More than 200 products are produced in our sheet mill, wire mill, bar mill, hoop mill, tin mill, plate mill, structural mill and rail mill.

"In the Birmingham district and other sections of the flourishing South, many steel-using plants have located in the past decade. Others have greatly broadened operations.

"Our company has voiced its belief in the continued growth trend of industry in the Birmingham district and its market area by undertaking at this time the largest expansion in its recent history."

* * * * * * * * *

The Committee of 100 or any of the undersigned members of the Executive Committee will welcome the opportunity to give you confidential and specific data regarding the advantages of the Birmingham district for your plant, office or warehouse.

BIRMINGHAM COMMITTEE OF 100

1916 Sixth Ave., N., Birmingham, Ala.

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Useful Accessories (Continued)

accurate measurement of surface tension has been developed by Joseph B. Kushner, 115 Broad St., Stroudsburg, Pa. The Sur-Ten Meter, designed to give surface-tension readings accurate to within 5% or better, is said to be ideally suited for routine surface-tension control under production conditions. The instrument offers a simple method for determining the surface tension of a process liquid or liquids. It is said that surface-tension measurements can be made in less than five minutes by even the most inexperienced of personnel. (U-8)

Mill Maintenance

How To Keep Motors in Top Shape

Electrical motors are designed to give good service if they are installed and maintained properly. Here are six key points to a good maintenance program:

1. **Keep motors clean.** Accumulations of dirt and dust on insulating material speed up deterioration; they restrict heat radiation and may include destructive agents, such as acids, alkalis, and metals. If the installation is such that you cannot blow the windings and other parts with dry compressed air, you should dismantle the motor, probably annually, and wash it out with a suitable solvent.
2. **Keep oil off winding.** Lubricating oils and greases dissolve certain components in ordinary insulating varnishes. Be careful when you lubricate bearings that you don't get oil or grease on windings. Carelessness causes most of this trouble.
3. **Watch for bearing wear.** Sleeve-bearing wear varies with the type, the environment, and the care the bearings get. Oil and grease in most bearings become contaminated with dirt, dust, and other foreign matter. All sleeve bearings should be washed out and refilled with new oil or grease under manufacturers' instructions. You can check air gaps with feeler gauges to see how fast the

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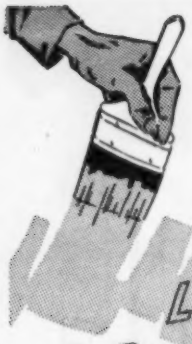

EVERYTHING'S THE SAME
BUT THE NAME

Now It's . . .

The LYON-RAYMOND Corporation

● Under its former name, LYON-Raymond Corporation linked 80 years of successfully manufacturing quality products through three generations of the LYON family with 30 years of maufacturing material handling equipment under the RAYMOND family management.

● Because the name LYON had no connection with present company management and caused confusion with similarly-named manufacturers, it was decided to shorten the name. It is expected that this new name — The RAYMOND Corporation — will better identify RAYMOND family management now and in the years to come.

● The company in the past has built up a reputation for quality products and for pioneering in numerous types of *Hydraulic* Elevating Equipment. During the last several years, we have brought forth a notable number of "firsts"

● Today, under our new name — The RAYMOND Corporation — we will continue to help keep materials moving — in factories, in warehouses, in every field where electric trucks and hydraulic elevating equipment can be applied. And, while our name is changed, RAYMOND policies, services and quality of products will continue on the high standards already established.

A Famous RAYMOND First . . .

SPACEmaker
ELECTRIC TIERING TRUCK

New rider-type truck that gives you up to ⅓ more storage space than conventional tiering trucks. Actually right-angle stacks loads 130" high from aisles only 6-ft. wide. Operates with ease in trucks, boxcars, low-capacity elevators; on lighter-capacity floors.

SpaceMaker Model E2S7
Straddle-type, telescopic tiering truck. 2000-lb.cap.

Send for free Bulletin 703 today

RAYMOND

Formerly LYON-Raymond Corporation

Electric Industrial Trucks Hydraulic Elevating Equipment

The RAYMOND CORPORATION

9553 SpaceMaker Street, Greene, N.Y.

Mill Maintenance

(Continued)

bearings are wearing.

4. **Check brush contacts.** Good contact between brushes on commutators or rings is necessary. You should check these parts every three or four months. Sand brushes when they are installed new or after the commutators or rings have been turned or ground. Since one collector ring will wear or get rough more often than the other, you should swap the field leads once a year to keep both rings wearing the same.

5. **Watch for loose connections.** During World War II, a lot of inferior solder was used. Some of this solder is still showing up. Joints between armature coils and commutator risers are frequently found loose. You can detect the loose joints if you will feel them immediately after a motor is shut down because the solder starts to soften. Also, you can feel shorts in stator coils, broken commutator bars, and loose connections. The difference in temperature will be sufficient for you to pick the spots.

6. **Check starting equipment.** Contacts of starting equipment burn, wear, and get rough. You should smooth the contacts once a month or oftener, depending upon operating conditions. Resistor grids should be blown out and inspected, when you check the control, to prevent current leakage and permit better heat radiation.

Questions AND Answers

History of Long-Draft Spinning and Roving

Technical Editor:

As I understand it, long-draft spinning was really patented in England in the early part of the nineteenth century but did not develop fast, and the Casablancas system emerged from that. I also understand that one of the textile-machinery builders was licensed under that patent to manu-

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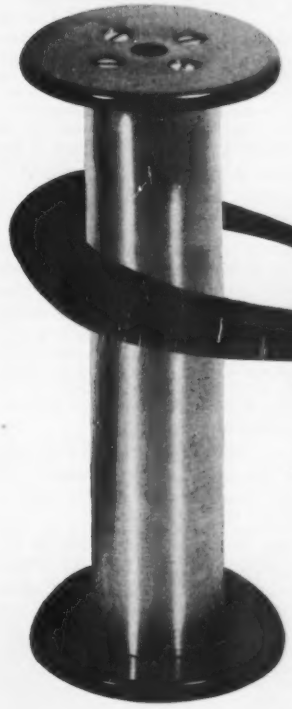

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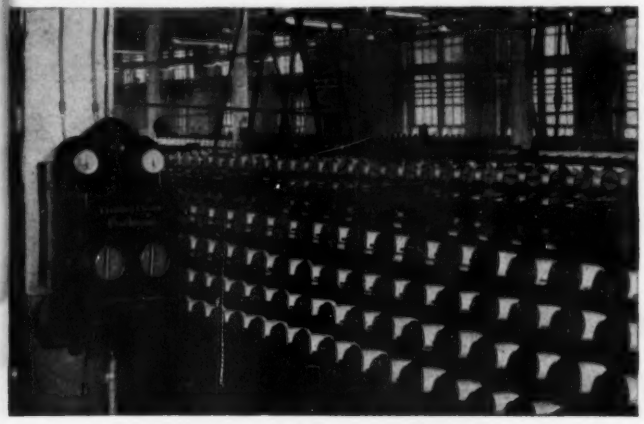

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Questions and Answers

(Continued)

facture equipment for long-draft spinning in this country and that one of the others developed its own. I should like to have a brief summary of the history of long draft. (9454)

You are right in your belief that the original patent was English. The inventor was Philip Chell, an engineer, of Kensington; and his patent was dated 1823. He employed "endless revolving straps to support and carry forward the material." Furthermore, he applied his system to drawing and roving, as well as to spinning, although with respect to fibers he was concerned only with hemp, flax, and waste silk. His invention was illustrated in the July 17, 1926, issue of TEXTILE WORLD as a result of the intense interest that had been aroused in the United States over the subject of long draft at that time.

The first long-draft patents in America were issued to Jim B. Fuller of Norwich, Conn., in 1868. Fuller's first patent described a special bearing, saddle, and middle top roll that were adjustable to give adequate control of short cotton fibers. A second patent concerned the drafting of long fibers such as hemp and flax. This second patent described an apron to be used on a large bottom roll to keep fibers under control for a greater portion of their length.

In 1870, a patent issued to Charles P. Leavitt described a two-apron system that resembles modern developments to a surprising degree.

Other long-draft inventions were born to live only briefly and be forgotten. Reference to the bound volumes of TEXTILE WORLD discloses one by Georges Fauquet in 1896 and another by one Meyer in 1906. Apparently nothing became of these systems unless they were preludes to some of the more successful ones that appeared later.

Long-draft spinning was first publicly exhibited in this country in 1926. This was at the International Textile Exposition in Boston. One of the systems then shown was the Casablancas, for which the first patents had been obtained by Fernando Casablancas, of Sabadell (near Barcelona), Spain, around 1912. The first long-draft ring frame was exhibited at the School of Technology of Sabadell in July, 1914, and that is the date generally accepted as the birth of modern long drafting.

The men primarily responsible for bringing the Casablancas system to the United States were Charles F. Broughton, Wamsutta Mills; S. Marshall

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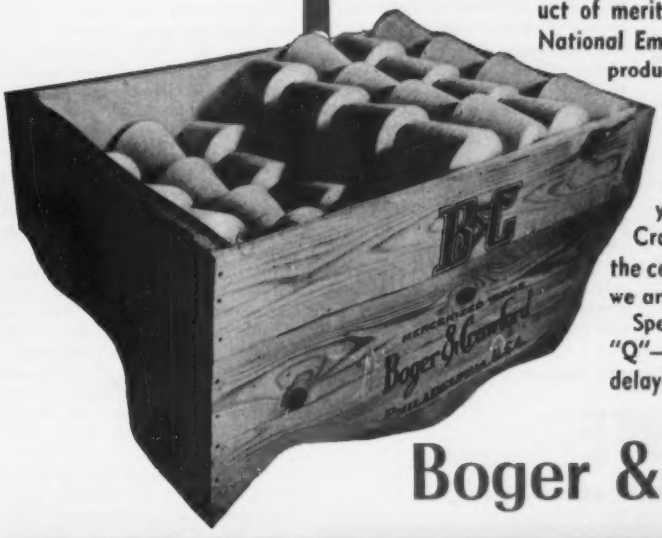

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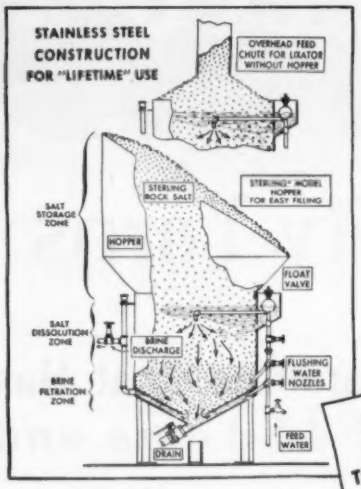

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Questions and Answers

(Continued)

Beattie, Piedmont Mfg. Co.; and T. M. Marchant, Victor-Monaghan Co. They formed the United States Casablancas Syndicate in 1925, with an office at 12 Pearl St., Boston. One of the early activities of this organization was sending a delegation (consisting of Arthur H. Cottingham, general manager of Victor-Monaghan, and Arthur L. Emery, agent of Wamsutta) to the plant of Hilaturas Casablancas, S. A., at Sabadell, and to the offices of that company at Barcelona. The first installation was made at Wamsutta, and this was followed by installations at Victor-Monaghan and Piedmont.

Another important long-draft system given its first public demonstration at this Boston show was the Le Blan-Roth, introduced by Saco-Lowell Shops. Le Blan was the owner and Roth the manager of Le Blan and Cie., Lille, France, and they had developed their system about 1923. Instead of employing two short aprons, as had Casablancas, Le Blan and Roth employed one long apron in the lower position, surmounted by a standard-size roll and a small roll. Prior Casablancas patents had prevented the patenting of the Le Blan-Roth system in Europe, but no trouble was experienced in the United States. The name of the system was eventually changed to the Saco-Lowell-Roth, and the equipment is still produced by Saco-Lowell.

Rights to the Casablancas system have had a more varied career. Before 1926 was over, much the same men that had organized the Syndicate established the American Casablancas Corp. as a Delaware firm. The officers were Broughton, president; Ricardo Miret, originally of Spain, vice president; Marchant, treasurer; and Beattie, secretary. The board of directors included all of the above and also Kenneth Everett. An office was maintained in Greenville, S. C., for a short time.

In 1929, Whitin Machine Works was licensed to manufacture and sell Casablancas equipment. After an exchange of patents, the license was discontinued. Whitin continues to manufacture this type of equipment.

In 1936, John Casablancas, son of the inventor, moved to the United States. In 1937, he set up an office in Charlotte, N. C., to supply American textile mills with the equipment produced by the Casablancas High-Draft Co., Ltd., Manchester, England. He established a company under the old name of American Casablancas Corp., but as a North Caro-

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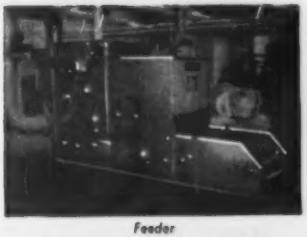

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Questions and Answers

(Continued)

lina corporation. In 1938, this company was dissolved and Saco-Lowell Shops was licensed to produce and sell the equipment. In 1944, the license was transferred to H & B American Machine Co., where it now rests.

Other long-draft systems have put in an appearance from time to time. In fact, Saco-Lowell Shops demonstrated a four-roll system—employing a small, unweighted roll between the front and middle rolls—at the same 1926 show in which it introduced the LeBlan-Roth system. Across the water, Howard & Bullough Ltd., Accrington, England, introduced a similar four-roll system about the same time, and in 1928 this was adopted by H & B American Machine Co., which exchanged technical information with Howard & Bullough.

Other systems, such as the Elastix-Roller—which employed a soft, top middle roll that produced a long contact with the bottom roll—were short-lived.

By 1929, serious efforts were being made in this country to apply long draft to roving. In the latter part of 1929, Whitin began applying the Casablancas system to slubbers and roving frames. Saco-Lowell Shops described application of Le Blan-Roth principles to roving in 1930.

But it was not until 1934 that one of the most important principles in modern super-drafting began to emerge—the condensing of the strands of fiber between two drafting sections in a roving frame. That year Whitin announced a revolving tube with a hook front and back that accomplished the condensing by inserting false twist. By 1937 Whitin had replaced this revolving tube with a simple guide that served to turn the roving up on its edge—the invention of Carl D. Brandt, of the Whitin staff.

In 1936, H & B American Machine Co. adopted a flared-mouth scroll to fold in the selvages and give the strand a half turn of false twist. The inventor of this device was E. L. Martin, then president of H & B.

In the meantime, Saco-Lowell had been employing a top roll with a concentric groove, meshing with a bottom roll having a concentric ring, to fold in the selvages. In 1937, it adopted instead a self-threading trumpet guide with a bent-over pin or finger in the center that gave the strand of roving a tubular form open at the bottom. This was the invention of R. M. Jones and other members of

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4844 Pounds	.3%	6182 Pounds	.5%	4251 Pounds	.6%
3014 "	.7%	4828 "	.6%	4532 "	-0
2688 "	.3%	4996 "	.2%	9464 "	.6%
4796 "	.7%	6349 "	.7%	4144 "	.9%
3954 "	.2%	8346 "	.4%	6746 "	-0%
7084 "	-0%	4089 "	.6%	3105 "	.2%
5728 "	.6%	3870 "	.3%	8144 "	.5%
5366 "	.2%	4964 "	.8%	2242 "	-0%
8354 "	.8%	7152 "	.1%	5612 "	.1%
5482 "	.2%	5387 "	.9%	4256 "	.1%
4214 "	.5%	6468 "	.7%	5612 "	.6%
5624 "	.3%	4251 "	.5%	4690 "	-0%
4997 "	-0%	8542 "	.8%	5000 "	1.0%

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Questions and Answers

(Continued)

the company's research staff.

While long-draft roving, before the war, took its place beside long-draft spinning as an accepted principle of yarn manufacture, developments in both roving and spinning have been continued since that time. For example, the latest Roth design replaces the two rolls above the apron with one large top roll placed forward of the middle bottom roll to deflect the apron into an arc and thereby increase the area of fiber contact. This invention was by Benjamin Shaw, of Biddeford, Me. Saco-Lowell announced it as applicable to spinning in 1944 and to roving in 1948.

In 1949, the Casablancas High Draft Co., of Lancashire, England, announced an S-3 system that used two extra-long aprons and a removable platform to support or deflect the aprons. The new system was prepared for cotton-spinning machinery.

1950 brought announcement of the Bird universal drafting system by Collins & Aikman [TW, June, 1950]. This system has a single apron, a nose bar, and a movable pin roll to control short fibers. Any fiber from 1 to 9 in. long is handled in both roving and spinning.

The Ambler system, made available in the U. S. in 1951 [TW, March, 1951] gives drafts from 20 to 200. This method controls fibers by pressing them in a rectangular area between a back bottom square-grooved roll and a top roll. The top roll fits in the square groove without quite touching the bottom roll at any point. An individual fiber is controlled by pressure from surrounding fibers.

Books of Interest

Raw-Material and Waste Survey

INDUSTRIAL WASTES, Their Conservation and Utilization, by Charles H. Lipsett; Atlas Publishing Co., Inc., 425 West 25th St., New York 1, N. Y.; cloth, 317 pages, $5.

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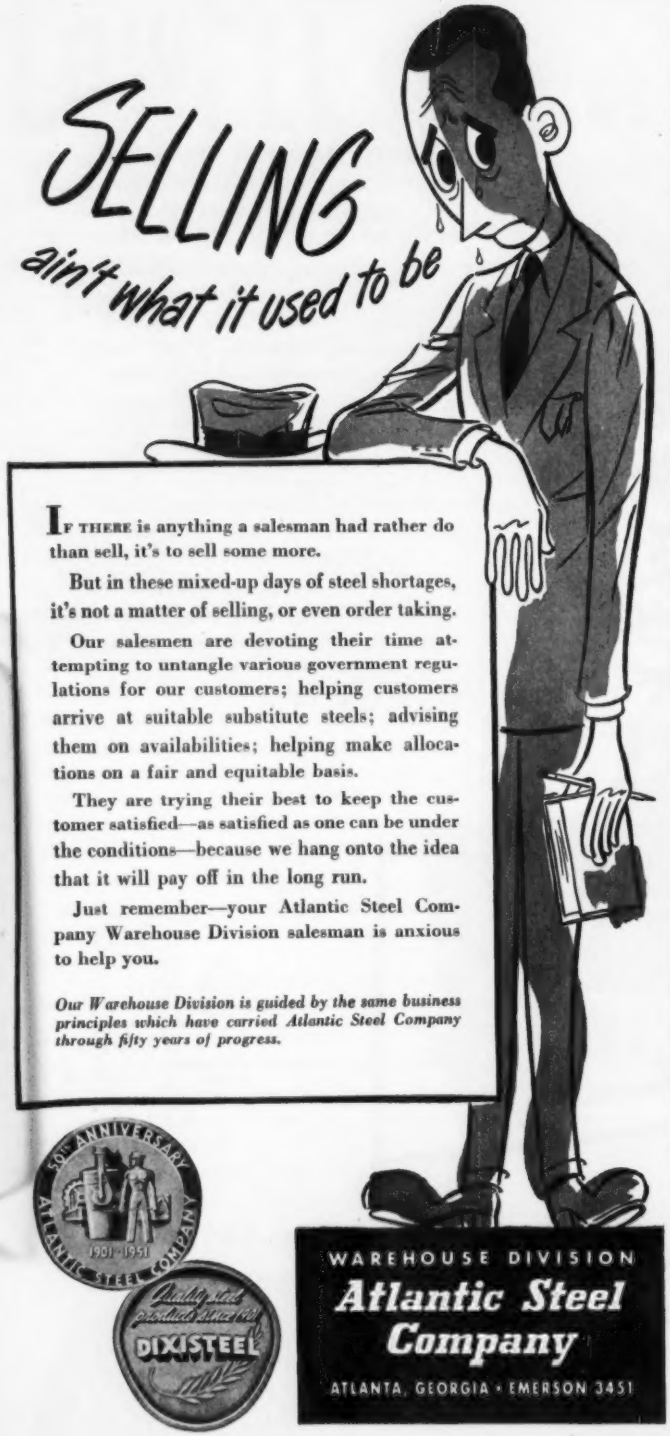
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Books of Interest (Continued)

an excellent analysis of most of the important raw-material and industrial wastes that exist. The role of each in the economic life of the country is described, as well as the origin of the various wastes, methods used in collecting them, marketing procedures, recovery processes, and utilization by American industry. Of special interest to textile men are chapters on grease recovery; cotton, linter, rayon, and wool waste; wool noils; and chemical waste and its recovery. The author is publisher of several trade publications in the raw-material and waste field.

War Protection—In Case It's Needed

CIVIL DEFENSE IN MODERN WAR by Augustin M. Prentiss; McGraw-Hill Book Co., 330 West 42nd St., New York 18, N. Y.; cloth, 429 pages, $6.

This is a fact-packed working text on the protection of civilian population against atomic, bacterial, and chemical warfare. Part I gives a comprehensive picture of the various types of aircraft used in modern war and the way they and other weapons would be dispersed if war came to our shores. Part II offers suggestion on civil air-defense methods for the protection of industries, homes, and individuals—with emphasis on "combined" protective measures. Part III is a detailed guide to a civil-defense program for each level of government. All through the book the individual's responsibility is underlined.

Aid to Understanding The BLS Price Index

THE BLS CONSUMER PRICE INDEX, Management Report No. 99, by Max D. Kossoris; California Personnel Management Assn., 2180 Milvia St., Berkeley, Calif.; mimeograph, 11 pages, $1.

The director of the Western Region, Bureau of Labor Statistics, U. S. Dept. of Labor, recently prepared this report for the California Personnel Management Assn. In it he discusses the most widely used statistical measure compiled by any governmental agency, the consumers' price index. An excellent explanatory job is done that makes and will make the index (and exactly how it is arrived at) more understandable for the many people in industry who place so much reliance upon it. Many of the factors going into the index and their weighting in the over-all figure are explained in some detail.

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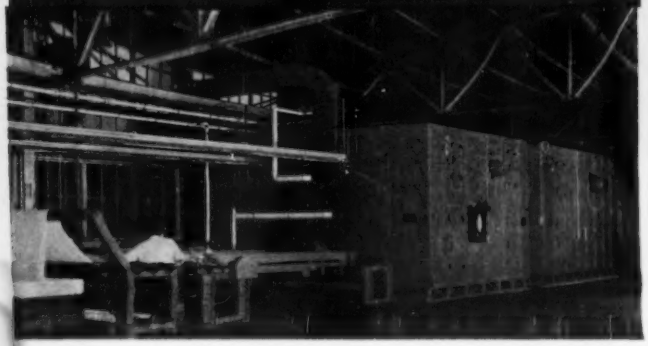

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Books of Interest (Continued)

1951, by Associated Factory Mutual Fire Insurance Cos., 184 High St., Boston 10, Mass.; paper, 151 pages, no charge to insured plants.

Alphabetically listed and profusely illustrated in this manual are the various types of equipment that go into the maintenance of a "fire-safe" plant. Two general classes of devices are included: (1) those used for the control and putting out of fires and the prevention of explosions, and (2) those that in themselves prevent serious fire or explosion hazards if they are not properly safeguarded. The manual is available to all insured plants as an aid in planning fire protection and in purchasing good equipment.

Comic Book Packs Anti-Inflation Wallop

HOW STALIN HOPES WE WILL DESTROY AMERICA by Bemis Bro. Bag Co.; Pictorial Media, Inc., 205 East 42nd St., New York 17, N. Y.; comic book, 16 pages, single copy free, $10 for 100 copies, down to 3¢ per copy for larger quantities.

The dramatized story in this colored "comic" booklet is of great importance to every textile man and woman, whatever his rank in the industry. The Psychological Corp. of New York tested in Bemis Bro. Bag Co. plants the effectiveness of the medium in getting the message across to rank-and-file employees. Workers exposed to the comic booklet were found *to have "a significantly higher appreciation* of the recommended ways to stop inflation" than did workers who did not see it.

The distribution of this comic book among employees would be a real service rendered by mills anxious to do their part in awakening men and women everywhere *to the importance of writing to* and encouraging their congressmen to stand squarely behind accepted anti-inflation measures for the long-term benefit of everyone.

Technical Data On V-Belt Drives

ENGINEERING STANDARDS FOR MULTIPLE V-BELT DRIVES by Rubber Mfrs. Assn., 444 Madison Ave., New York 22, N. Y., and Multiple V-Belt Drive and Mechanical Power Transmission Assn., 7 West Madison St., Chicago, Ill.; paper, 16 pages, 2 copies for $1.

This 16-page technical manual has been brought out for the benefit of those who use multiple V-belt drives. Indicated, for example, are the horsepower ratings of various-diameter V-belts, as well as the proper sheaves and belts to use for efficiency and economy of the complete drive in relation to the particular duty required. Other service factors, standards, and correlations are also given.

Pointers for Supervisors

(Continued from page 174)

them are excellent but others are filled with name-calling. Look over the latest issue of the CIO News and see how often emotion-filled words are used instead of words presenting reason.

Foremen must check their own maturity, too, on this score. How often I have heard a foreman say, "If it were not for that so-and-so X in my department, I wouldn't have any complaints." In an organized plant the union is likely to get the blame if everything does not run smoothly. In an unorganized plant there is also a scapegoat if something goes wrong. Every foreman knows he should look at what he himself has done rather than blame others, but it's so easy to personalize.

Slamming Doors Won't Help

Something went wrong so Barbara started slamming doors. How childish! Yes, but also how like many of us who supervise others! No day goes by in the life of any foreman when he doesn't feel like slamming doors. The test of his emotional maturity is whether he actually does so. The other day one of our supervisors was invited to step outside to fight when he corrected a worker. I am sure it was a temptation for the foreman. The foreman, however, kept control of himself, declined the opportunity, and didn't even raise his voice.

Of course, this is what most foremen would have done, particularly if the worker were larger and stronger. Yet loss of temper and "door slamming" often show up in less obvious ways than fist fights. Every foreman knows the irritations that some workers seem to be able to think up. The test of the foreman is his reaction. If he fires the man while he is angry, he is door slamming. If, restricted by company rules on discharge, the foreman wants to get even, he is acting just like the little girl. The emotionally mature supervisor will take only considered action and certainly will not spend his time thinking up ways of getting even, no matter how aggravating the worker may be.

We had to save face for Barbara. She is only a child, we said, so when the storm had blown over we served her her supper as though nothing had happened, and no one even mentioned the dog. She is not yet emotionally mature, so we did not expect her to admit she was wrong. How often the boss has to treat the erring supervisor the same way! We all lose our tem-

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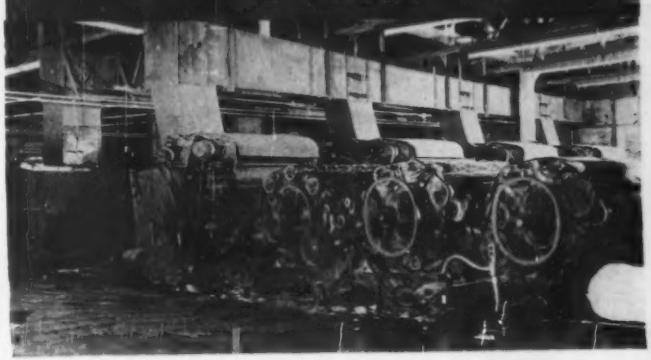

In mill after mill where Proctor metallic worsted cards have been installed the results reported are always the same. Tremendous increases in production are the rule rather than the exception. Most users report double the production on these smaller cards over that obtained on old, larger fillet clothed cards. Not only is production increased often as much as a 100%—but the quality of the card sliver is improved. Test after test shows great reduction in neils. Increased yield results from the elimination of stripping waste, which is one of the most important advantages of metallic clothed cards. Since the clothing is self-stripping, grinding is entirely eliminated, resulting in a substantial labor saving and preventing the cards from being out of production for several hours every few days. Another important consideration with these modern cards is the size—Proctor metallic cards are smaller than older types which means that much less space is required for the same output, in some cases as little as one-third of the space formerly used. Many of the best known mills in the industry are completely equipped with these cards—including Juilliard, Cleveland, Forstmann, Hird and National. The card room shown in the photo is one of the most modern in the industry with the card feed hoppers being kept supplied with stock by means of an automatic overhead conveying system. If you would like concrete production records on the performance of these cards—or would like us to project in black and white, what could be done with these cards in your mill—write today.

For more information on Proctor equipment for the textile industry—see our catalog inserts in Textile World Catalogs and Davison's Textile Catalogs.

NOTICE: Much Proctor drying equipment and textile machinery is covered in full or in part by patents or patents pending.

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pers. We all make mistakes if we do anything at all. But many a labor case has gone to arbitration in organized mills simply to save the face of a supervisor who made a mistake and would not admit it.

It doesn't help matters to say the union does the same thing. Lots of workers are not emotionally mature either, and they too can't admit they are wrong. A supervisor, however, should be able to rise above such pettiness and admit that once in a while he might be wrong.

Don't Misuse Authority

In contrast to Barbara's actions, consider those of her parents who acted like adults. There was no doubt they had authority over her. There was no doubt they could have used force, could have demanded an apology before dinner, and could have nagged Barbara about her childish behavior. They did none of these things, although at times, I am sure, the temptation was great. The child's parents acted like emotionally mature adults, recognizing childishness when they saw it.

In his book on *The Mature Mind*, Overstreet in telling what we can do to help ourselves mentions the use of authority as an example. Speaking of teachers he says, "Again, every teacher is in a position of authority. Between him and his students there is a gap. Will he so love to exercise his authority that he increases the gap, making his students feel small and frightened? Or will he consider the gap as merely functional in the teaching situation and treat all of his young charges as though they were equal with himself in dignity and human rights?" (p. 278). Barbara's parents merely considered the gap as functional. They acted mature. The foreman can show his maturity the same way.

When a foreman has to use only the dignity of his office to command respect, he really does not have the true respect of his workers. When anyone tries to separate foremen and workers into two different groups of individuals and forbid association on any informal plane, he is, of course, playing right into the hands of those who preach class differences and hatreds. But he is also teaching foremen to misuse authority. The supervisor who is emotionally mature will treat his workers as equals in "dignity and human rights."

I am sure Barbara's blood pressure rose during her outburst. I am sure also that the child was unhappy for a time. These are always the results of emotional immaturity. As we get older our systems can't stand such strains. For our own health and for

MEMO

To: users of A.C. adjustable Speed Drives

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Only SELECT-A-SPEDE

offers the NEW MAGNETIC AMPLIFIER CONTROL
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– HEART OF THE SELECT-A-SPEDE

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The Select-A-Spede also offers a variety of optional features, such as: reversing, dynamic braking, jogging, sequence control, controlled acceleration, interlocked slow speed start, multi-motor drives, etc. It is possible to provide a Select-A-Spede Drive to exactly suit your special requirements.

For further information, contact your nearest Louis Allis Application Engineer or write for Bulletin 1100-B.

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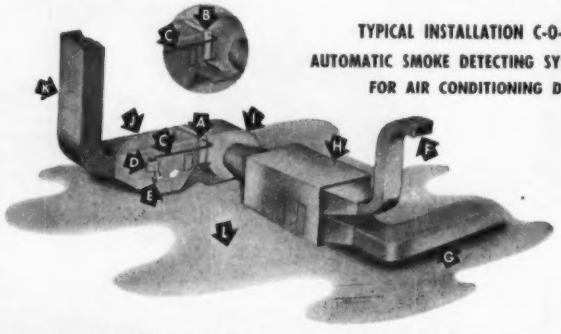

A perforated smoke accumulating pipe
B smoke accumulating pitot tube (alternate)
C pipe line for carrying continuous air samples to smoke detector
D smoke detector
E audible alarm
F fresh air intake and duct
G return air duct
H air cleaning unit
I air fan
J air cooling and heating unit
K supply air duct
L floor level

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the good of our companies, we supervisors must take a lesson from Barbara. The supervisor who shows maturity in dealing with the day-to-day problems that arise is not only going to be a better supervisor who will get production at lower costs, but he will also live a happier and healthier personal life.

Answers to Textile Quiz on Page 182

1. d. [TW, July, '51, p. 101]
2. c. [TW, July, '51, p. 196]
3. a. [TW, July, '51, p. 121]
4. b. [TW, July, '51, p. 123]
5. a. [TW, July, '51, p. 135]
6. c. [TW, July, '51, p. 125]
7. b. [TW, July, '51, p. 97]
8. b. [TW, July, '51, p. 99]
9. d. [TW, July, '51, p. 101]
10. a. [TW, July, '51, p. 111]

Exploring the Community

(Continued from page 176)

buckets lately?) In case of fire, the nearest fire equipment is easily spotted by its vividly colored post.

Many mills now paint all moving parts of machinery a bright color, provide automatic stop devices and hood arrangements to protect the worker from machinery accidents. Safety placards and bulletins are put in prominent places, easily read by the workers. Motor alleys are closed to all workers while machines are in operation. Ramps often replace steps.

More and more mills are giving attention to condition of floors—old, worn, and splintered floors are being replaced or dressed down, sanded, and finished with clear varnish. Dry cleaning of floors instead of using cleansing agents that might leave slippery surfaces has prevented many a fall.

When one gets down to brass tacks on safety, it is in the adoption of simple rules for careful housekeeping that will help eliminate hazards causing falls—the basis of 16% of all industrial accidents. The feeling of security underfoot lends greater confidence to the worker on his job.

There IS something YOU can do ABOUT INFLATION!

Your future... the future of your business, large or small, depends on how many people understand the story in this booklet!

Businessmen recognize inflation as the nation's greatest single threat. But most of us have felt "What can one man—even one business—do to stop it?"
But there is a way—if enough of us work at it. We can help more people . . . the men and women who work and vote and pay taxes . . . to understand the nature of inflation, its causes and cures. Then we will have gone a long way toward eliminating this pending catastrophe.

ONE TOOL YOU CAN USE: To help us give our own Bemis workers the inflation picture, we used the colorful, new 16-page booklet "How Stalin Hopes We Will Destroy America" produced by Pictorial Media, Inc. The more widely the booklet is used, the more good it will do . . . and it is available for distribution to your workers, too. It follows the time-proven "comic book" technique . . . dramatizes the dangers . . . and shows how all our citizens can help halt inflation before it's too late.

TESTS SHOW IT HELPS WORKERS: To get an impartial judgment of the value of "How Stalin Hopes We Will Destroy America," it was tested in Bemis plants by the Psychological Corporation under the direction of Dr. Henry C. Link, a foremost research authority. Dr. Link says "Those workers exposed to the booklet were found to have a significantly higher appreciation of the recommended ways to stop inflation than did the workers who did not see the booklet. Details of this test are available upon request." And Bemis factory workers make such statements as "Everything it says hit home, but you'd never figure it out for yourself until you read it"..."It's told in an interesting way so anyone can understand. My daughter, age ten, understood all of it"..."In picture form it impresses you more. Most people don't read about it"..."Had ideas that we wouldn't think about otherwise while we are working away—good book, agree with it—I guess I won't be the only one."

Because we believe this message is growing more urgent every day, Bemis is taking this means to commend to other businesses this weapon against inflation. It is the first of a series of such material that we expect to use.

BEMIS BRO. BAG CO.
St. Louis 2, Missouri

FOR EVERY BUSINESS, LARGE OR SMALL: In quantities, it costs only a few cents a copy—$10.00 for 100 copies, down to 3 cents per copy in larger quantities. Single copy free. For full information, write PICTORIAL MEDIA, INC., Attention: Paul Wheeler, 205 E. 42nd ST., NEW YORK 17, N.Y.

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SACO-LOWELL'S
Shaw Long Draft
SPINNING SYSTEM

New . . . streamlined . . . oilless . . . the Slixonice back saddle with a durable plastic bearing was developed by Dixon in cooperation with engineers of the Saco-Lowell Shops. It is now used as standard equipment on the Shaw long draft spinning system.

Back roll lubrication and the danger of oil-soaked yarn are eliminated entirely because instead of cast iron, the new Slixonice saddle is equipped with long-lasting, low-friction and easily replaceable nylon bearings. This results in a streamlined saddle with considerable reduction in lint accumulation when in use. It permits accurate control of roll speed and weighting. The 1⅛" long bearing allows ample roll setting adjustments.

Since this Slixonice saddle is an integral part of the Shaw unit, this combined designing and engineering effort resulted in an improved saddle — precision designed to "do the job" — to function perfectly under all weighting and speed requirements of the long draft system. Present Shaw frames with cast iron saddles can easily be equipped with the new Slixonice saddle for economical, uninterrupted, dependable performance. Your Dixon representative has full details.

Old saddle types on other spinning frames can also profitably be replaced by Slixonice lock-in back saddles and Lubronze front bearing inserts. See your Dixon representative for more information on the complete Dixon line of saddles and saddle assemblies.

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LUBRICATING SADDLE CO.
Established 1876 Bristol, Rhode Island

Checklist for Screen Printers

If you have any of these problems:
Pinholes in your screens
Trouble with metal or fiber screens
Dryed-on printing paste
Warped frames
Loose gauze
Uneven printing tables
. . . this article may help you

By T. N. PATRICK

SCREEN PRINTING with either cloth or metal-gauze screens presents numerous problems to the printer. Some of the difficulties that may be encountered are described in this article.

Screens themselves may be constructed of either natural or synthetic fibers. Most commonly employed are real silk, nylon, and Vinyon. Metal screens are usually made of copper or phosphor-bronze, although stainless steel, Monel, and other metals have been used with success.

The principal factors regarding the use of fiber or metallic gauzes for screens are:

1. Resistance to the chemical action of the print pastes.
2. Resistance to stretching and denting.
3. Resistance to wear.

Nylon and Vinyon screens are much more resistant than silk to chemical attack, especially by alkalis. They are also much less absorbent, al-

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In textile production, too, even *good* efficiency can be improved. For instance, it's entirely possible that a certain starch . . . perhaps even tailor-made to your own specifications . . . could contribute to an efficiency gain.

Why not call your Anheuser-Busch representative? He'll be glad to come and talk it over.

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though their wear resistance is higher than for silk.

In producing a sensitized coating on any type of gauze or screen, it is first necessary to coat the screen with a uniform film of gelatin or resin. Synthetic resins, such as polyvinyl chloride or hydrolized polyvinyl acetate are often employed.

When gelatin is used, the addition of a chrome salt such as ammonium bichromate is made in order to render the coating more sensitive. Gelatin possesses a disadvantage in that it must be applied at a room temperature of not less than 90° F. Below this temperature, the solution becomes unworkable; and it is almost impossible to obtain a level film on the gauze.

Generally, metallic screens provide a better coating foundation than natural or synthetic fibers because of the slight roughness of the metallic wire as compared with the smoother silk or synthetic-fiber yarns. Better adherence and leveling is obtained with the metallic wire. The thicker film laid down on wire gauze creates some slight trouble in making the screen. A longer exposure to light is required to insolubilize the coating. Also, the screen is harder to clean when it becomes necessary to remove the coating.

Proper Coating Removes Pinholes

Many screen-printed fabrics show specks of color throughout the ground of the print. When the pattern includes dark shades, such as blacks, navies, dark browns, etc., and the spots are frequent, the selling value of the goods may be reduced considerably. These faults are due to small pin-holes in the screen coating. These holes allow the print paste to penetrate through the screen at places other than the pattern. The formation of pin holes may be traced to three main causes:

1. Improper application of the gelatin or resin coating.
2. Insufficient exposure to light, so that the coating is not rendered completely insoluble.
3. The presence of small particles of fats or waxes, either in the gelatin solution or adhering to the screen.

Proper coating may be done by employing the right temperatures when using gelatin. Care must be exercised in the application of the original coating and in the final strengthening of such coatings with additional paints and lacquers.

Unless the original sensitized undercoating is firmly anchored to the screen, no amount of finishing with hard lacquers will prevent the formation of pin-holes. Every care should

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Brakes for controlling the beams have been replaced by a mechanical continuous let-down. The ratchet take-up has been replaced by a new continuous take-up. A high starting torque motor equipped with quick stop is used to minimize the periods of acceleration and deceleration. These changes improve fabric quality . . . eliminate shade marks . . . reduce stop marks so that they usually dress out.

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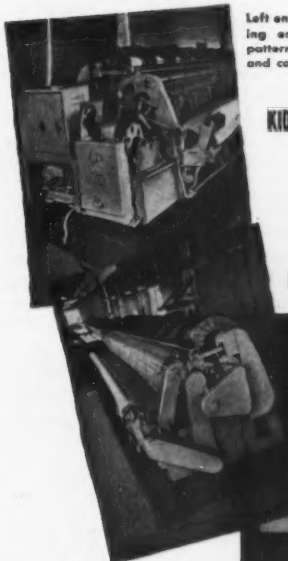
It is easy to set and maintain because it's mechanical in operation. It completely eliminates shade marks and reduces stop marks. Fabric quality is improved.

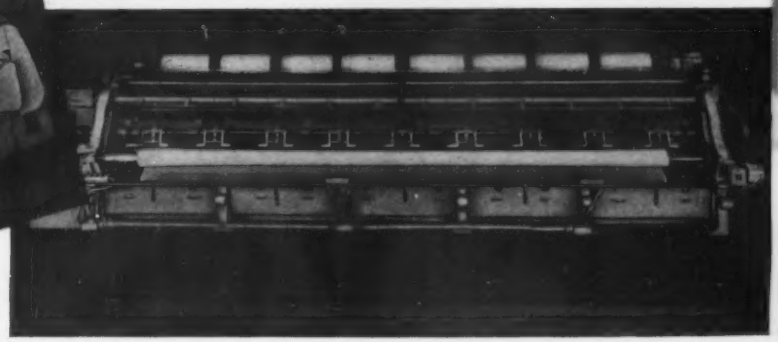
✔ **NEW VARIABLE SPEED DRIVE.**
A turn of a hand wheel varies machine speed. No chain drive . . . no gears to be changed . . . quieter operation. Tachometer included.

✔ **NEW CONTINUOUS TAKE-UP.**
It permits quality to be established quickly by turning an adjustment screw. No gears or sprockets to be changed. No clutch. Once set, it requires no adjustment.

✔ **OTHER FEATURES**
These include improved plunger design, improved front guide bar lifting mechanism, quick-stop and jogging control.



Left end of machine showing enclosed gear box, pattern mechanism, motor and controls.



Right end showing continuous let-down and take-up.

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BLOOMFIELD, N. J.

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are our contribution to the color resources of those who wish to approximate the effect of fluorescent colors by less costly means. They are brilliant and beautiful in their own right.

Send for dyed swatches of "GLO-B" colors in the type of yarns you wish to use.

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be taken for thorough exposure of all parts of the screen to light. The outside edges of large screens often do not receive sufficient light. It is most important that the entire screen be covered uniformly with an equal intensity of light.

If only gelatin is used for coating, the best grades should be employed. Low grades often contain fats or waxy materials, so that adherence of the film to the screen is prevented by these impurities. The screen itself should be thoroughly cleaned with solvents before coating to remove any traces of greases or waxes.

Wash Your Screens Immediately

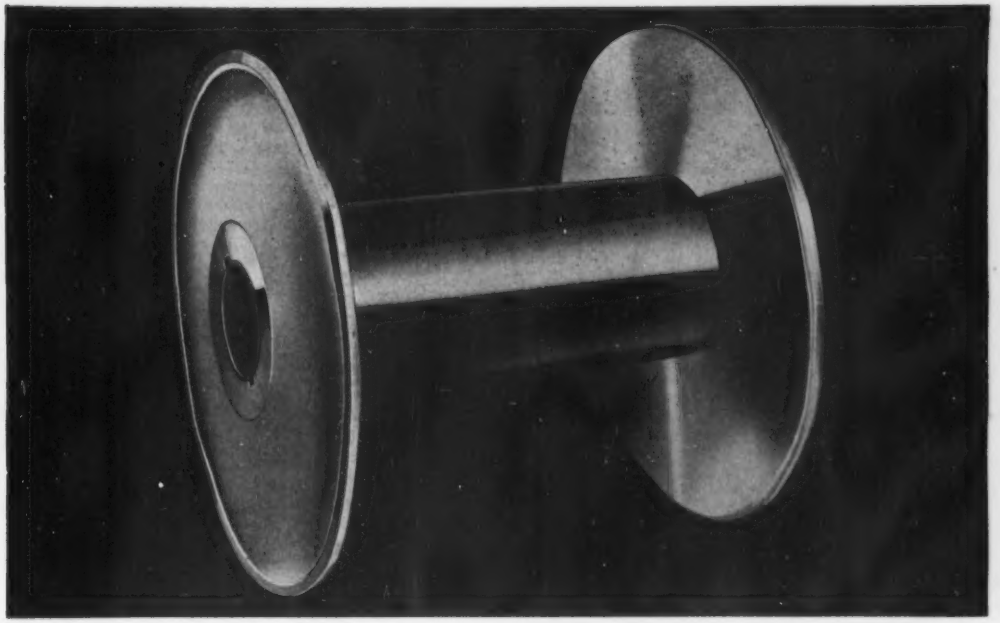
Dirty screens, mainly caused by improper washing, should not be allowed in any well-run print shop, but they do occur. Poor printing impressions and occasional soiled-print colors are the results of such a condition. When the mesh of the screen forming the pattern is filled up with hardened print paste, poor printing impressions result.

Most print pastes are thickened with some form of starch or vegetable gum. They have a definite film-forming tendency, especially when heated. Mordants and various metallic salts tend to intensify the hardening of the thickener. Screens should not be allowed to sit any length of time after printing but should be washed immediately. They should be washed first with cold water, followed by a warm rinse and a thorough brushing with a soft brush, while directing a stream of water on the screen.

Hardening of print pastes takes place more rapidly if the print shop is warm and dry, or if printing is done on heated tables. These conditions are quite common, and therefore the problem of "drying in" is frequently found. Metallic screens, too, tend to absorb and hold heat more than screens made of natural and synthetic fibers. Thus, metallic gauzes tend to speed up the hardening of the print paste.

There are several corrective measures which may be taken to minimize hardening. British gums, dextrines, and converted starches are more adhesive than raw starches and will dry into the screen mesh very quickly. Locust-bean gum, gum tragacanth, and some other vegetable gums have *little adhesive property. By using* the latter alone or mixed with British gum and starch thickeners, satisfactory printing impressions result; and hardening of the paste is decreased.

The use of lubricants such as sulphonated vegetable oils or emulsified



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DEMAND EXCEEDS SUPPLY

Thousands of Beams are shipped each year, but demand far exceeds the supply. In fact, to make delivery of some items, more than six months are required, and in fairness to our customers, orders must be filled in the sequence they are received. We will do our best to fulfill your requirements and welcome your inquiries.

Catalog of our material and brochure covering our manufacturing facilities furnished on request.

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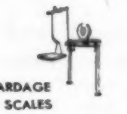
to guard your costs better!

After you've fought the battle of high costs and shortages—don't waste textile materials through careless handling! Tighten your control at every step! See that you have up-to-date scales—and enough scales—throughout your textile handling operations. Look into the advantages of Printweigh in stopping losses that originate through human errors. Whatever your problems in receiving, production, shipping, stock rooms and many other textile weighing operations . . . there's a modern Toledo to do a better job.

Today in your community you'll find Toledo as near as your phone; Toledo sales and service offices in more than 200 cities ready to help you in the selection or maintenance of scales vital in guarding your materials and costs.


YARDAGE SCALES

PORTABLE SCALES

FLOOR SCALES

PRINTWEIGHS

Write for a copy of our 50th Anniversary Brochure . . . helpful information on modern Toledo equipment.

TOLEDO SCALE COMPANY

TOLEDO, OHIO . . . Toledo Scale Company of Canada, Ltd., Windsor, Ontario

HEADQUARTERS FOR SCALES

mineral oils helps considerably in cutting down the adhesion of print paste to the screen. Hygroscopic agents also may aid in this respect, as well as helping color development in later stages.

When cleaning screens, several methods may be followed. In the case of starch thickeners, it is desirable to steep the screen in an enzyme bath before washing. If there is a considerable amount of vegetable gum present in the thickener, cold-water steeping before washing may suffice. In any case, if excessive drying-in of the thickener has occurred, it will be necessary to brush the screen on both sides.

Excessive brushing or scrubbing must be avoided, as it is almost certain to damage the lacquer. This damage results in either tedious repair work or the remaking of the screen.

Prevent Warping During Storage

When screen frames become warped from use, they can cause the following faults:

1. Poor printing impressions.
2. Light and dark patches.
3. Faulty registration.
4. Sparking of print pastes.

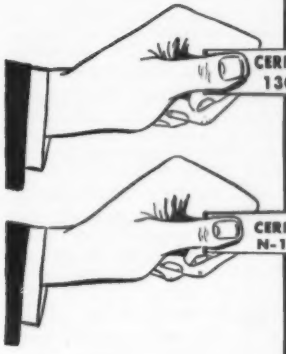
Wooden frames are more likely to become warped than metal frames. Only the best of well-seasoned wood should be used in making frames, and washing and drying should be done at as constant a temperature as possible. Screens should be stored under the same conditions of heat and moisture as is found in the print shop. These precautions will help a lot in preventing screen frames from warping.

Inferior printing impressions show up as blurred and thickened marks, especially in outline work. Printing difficulties will also be observed in each alternate repeat unless care is exercised in keeping the number of the doctor-blade passages uniform.

Since a warped frame imparts a slight rocking motion to the screen, it is difficult to pass the scraper over the surface so as to insure a level pressure throughout the movement of the blade. Large screens will show the warped condition to a greater extent than smaller screens.

On blotch effects, the warped condition shows up as light and dark patches of color. This appearance means that on some portions more print paste will be on the surface of the fabric than on others, and uneven penetration of the fabric results. Such defects are less noticeable in broken patterns than in large open areas. A new frame should be sub-

Look what's been added!



HOUGHTON SURFACE ACTIVE AGENTS

		CHEMICAL CLASSIFICATION	PROPERTIES AND USES
DETERGENCY & WETTING	CERFAK	Alkyl aromatic sulfonate Anionic—(Flake Type)	Used over full pH range for detergency and/or wetting. Also for compounding cleaning agents.
	CERFAK 1300	Polyoxyethylenealkyl thioether—non-ionic (Liquid)	Concentrated detergent and wetting agent, effective over full pH and temperature range at low concentrations. Okay in hard or soft water.
	CERFAK 1305	Non-ionic thioether (Liquid)	Detergent and wetting agent, having low sudsing property, suitable for continuous boiling and scouring.
COMBINED DETERGENCY & WETTING	CERFAK 453	Blend of anionic and non-ionic agents (Liquid)	[illegible] affect enzymes. Non-[illegible]. Rapid wetting speed, excellent rewetting ability, good scouring ability.
	CERFAK N-100	Amine condensate (Liquid)	Combined detergency and wetting action. Use with low per cent of alkaline salt. Good for all types of alkaline scouring.
	CERFAK N-115	Blend of non-ionic agents—(Liquid)	Excellent for scouring and dyeing woolen and worsted yarns and piece goods. Generally applicable as a detergent.
WETTING & REWETTING	SURFAX 1288	Alkylaroyl sulfopropionic ester—(Liquid)	Concentrated [illegible] neutral or mildly alkaline solutions for very fast wetting. Excellent dye bath assistant. An exclusive Houghton research development.
	SURFAX W. O.	Sulfated fatty ester (Liquid)	Combined penetrant, softener, wetting and rewetting agent. Long recognized as a standard of comparison in the textile industry.

Textile mill men are relying more and more on the complete Houghton line for wet processing . . .

CERFAK . . . chosen when detergency is the chief factor, and

SURFAX . . . selected when exceptionally good wetting and re-wetting power is needed.

They're the result of 15 years of surface active agent research by Houghton chemists . . . which never ends. Cerfak 1305 and Cerfak N-115 are the newest developments to produce faster, low-cost wet processing. We believe they will have wide applications in your mill.

Many mill operators are using the Houghton chart above in choosing surface active agents for specific processing jobs. We will gladly send you one of these charts, along with complete information and prices on the new Cerfak 1305 and N-115. Write or call E. F. Houghton & Co., Philadelphia 33, Pa.

CERFAK and SURFAX
. . . products of

E. F. HOUGHTON & CO.
PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO

Ready to give you on-the-job service . . .

WRITE FOR NEW BULLETIN
covering Houghton products for wet processing applications.

With labor costs as they are, the fast, *mechanized* TENNANT System can save you more *today* than ever—besides eliminating scrubbing. Here are 5 reasons why TENNANT "dry cleaned" floors are cleaner . . . brighter . . . safer—yet *cost you less:*

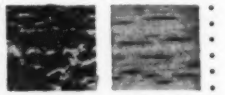
1 **Requires less manhours** for floor maintenance because floors can be cleaned *faster* . . . stay clean longer. Unlike rough, dirt-catching scrubbed floors, Tennant-cleaned floors are smooth, hard, dirt-resistant . . . clean up like magic! Saves time and expense.

2 **Makes floors easy to clean.** Fast, low-cost "dry cleaning" with a Tennant Machine keeps floors bright, durable. Only daily care is dry mop sweeping.

3 **Cuts accident costs.** Helps keep floors DRY and safe. Aids morale.

4 **Makes floors last longer** by protecting against dampness, decay and wear.

5 **Helps prevent losses** of yarn and cloth from splinter-snags and dirt.

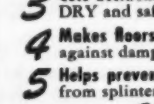


HERE'S WHAT HAPPENS when you stop scrubbing your floors and switch to economical Tennant "dry cleaning."

Microphoto at left shows typical surface of a scrubbed floor. Note how water has broken down top wood structure and caused rough, jagged, dirt-catching splinters. This makes floor hard to clean; and it breaks down rapidly under heavy traffic.

In contrast, microphoto of a Tennant "dry cleaned" floor (right) shows how the bright, smooth, protectively sealed floor resists dirt and wear . . . and is easily cleaned with minimum manpower.

Write Today! Learn how mechanized "dry cleaning" can save you money. Ask for new bulletin "HOW TO GET BETTER RESULTS IN TEXTILE FLOOR MAINTENANCE."



G. H. TENNANT CO.
2386 North Second Street
Minneapolis 11, Minnesota

The way to finer floors
TENNANT
Floor Maintenance System

OFFICES IN PRINCIPAL CITIES

stituted for the warped one as the only solution to this problem.

Don't Plan to Adjust Screens

It follows also that if a frame becomes warped, the screen itself will be more or less distorted, due to uneven tension. This distortion means that faulty registration of the pattern on the screen, as it is related to other parts of the pattern, will result. Sometimes the screen itself may be adjusted to take care of this difficulty, but usually the fault can only be overcome by remaking the frame. When frames are badly warped, the screen may become so slack in certain places as actually to crease, which, of course, means the making of a new screen.

When screen frames have become badly warped, a series of small splashes may appear at the sides or corners of the prints. These splashes are caused by the difficulty of controlling the pressure on the screen when in contact with the table surface. As the screen rocks, small particles of print paste become detached from the underside and fall upon the adjacent parts of the fabric. "Sparking" is very difficult to detect, especially when printing the more or less colorless stabilized azos and the soluble leuco-ester type of dyes. Of course "sparking" can also be caused by too rapid moving of the screen from the table surface, even though the screen frame be true. However, a warped screen will intensify this trouble.

Printing thickeners containing a large quantity of gum tragacanth, which does not have much adhesiveness, are more apt to "spark" than the more adhesive thickeners.

Watch Out for Slackness

Slackness usually is caused by careless stretching or tacking of the gauze on the frame when first made. Most screen printers agree that when gauze is stretched by hand on wooden frames, it is desirable to use close tacking onto the sides. Silk screens are usually put on slack and then immersed in warm water. The water causes the screen to shrink and tighten up. If too much allowance is made for shrinkage, the silk may take up unevenly, thus causing slackness in certain portions. Metal and most synthetic screens must be applied to the frame with the degree of tension considered desirable for proper printing.

Slackness in the screen will give rise to mis-registration of the pattern at the portion effected, usually down one side of the screen. The effect here may be anything from a slightly larger print impression to a perceptible "misfit," leaving a white space

Hunter Pointers

More than 300 corporations now offer their executives periodic health examinations.
--Advanced Management

A new bale breaker will tear open bales of cotton linters, excelsior, leather scrap, etc., even when bales are so highly compressed that an axe won't cut into them.
--Chemical Engineering

A business conference can be a place where conversation is substituted for the dreariness of labor and the loneliness of thought.
--Steel Magazine

An NPA order (M-75) prohibits the packing of dry dyestuffs and 43 other items in new or used steel drums, beginning Sept. 1.
--Daily News Record

British fabric exports to the U. S. in the first half of 1951 increased over the corresponding period of last year, ranging from 22 per cent gain in linens to over 150 per cent gain in silk and rayon.
--British Board of Trade Reports

Simplified tests to evaluate fabrics for shrinkage, washability and resistance to perspiration and soap are nearly ready.
--AATCC research committee report

U. S. sheep population has declined sharply from 47.4 million in 1941 to only 28 million this year.
--Textile Industries

New information on the tensile recovery of fibers is contained in a report now available from the Office of Technical Service, U. S. Dept. of Commerce.
--Textile Age

The cotton spinning industry operated at 138.9 per cent of capacity during June, compared with 123 per cent the year before.
--Daily News Record

CMP allotments for the third quarter for the textile machinery industry will not be high enough to take care of the replacement really needed.
--Daily News Record

Converters are racing to see which spot and stain resistant process will be the first to be generally accepted at the cutter level. Promotion is being readied at both consumer and manufacturer levels.
--Daily News Record

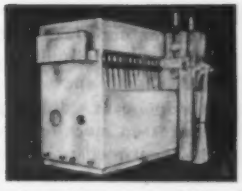
Inventories of apparel retailers at the beginning of June were valued at $2,356,000,000 compared with $1,866,000,000 the year before.
--U.S. Office of Business Economics

The Centralograph, a device fitted to machines for automatic performance checking, helped increase productivity at the R. Greg Co. spinning mill, Stockport, England.
--Target (England)

A new tape dispenser has a telephone type dial with which the shipping clerk selects the length of gummed tape needed. A twirl of the dial dispenses the desired length.
--Chemical Engineering

Copies of a proposed commercial standard of wool felt have been sent out to key associations and manufacturers for consideration.
--Daily News Record

James Hunter Machine Co. reports excellent progress for its first year as owner of Thomas Leyland Machinery Co. Service improvements include a new Hunter plant at Greenville, S. C., to serve the Southern territory. Leyland-Mycock expanders for cotton, wool and synthetic mills are better than ever.
--Advertisement



News from the field

The new FLEXREEL washer is setting new standards of efficiency and trouble-free performance in washing cottons and synthetics in rope form. Users report great savings in steam, water and labor. Traditional Hunter thoroughness in design and manufacture protects you from costly "down time" production loss. The Hunter Field Engineer will give you the details at no obligation. *Write to:*

JAMES HUNTER MACHINE CO.

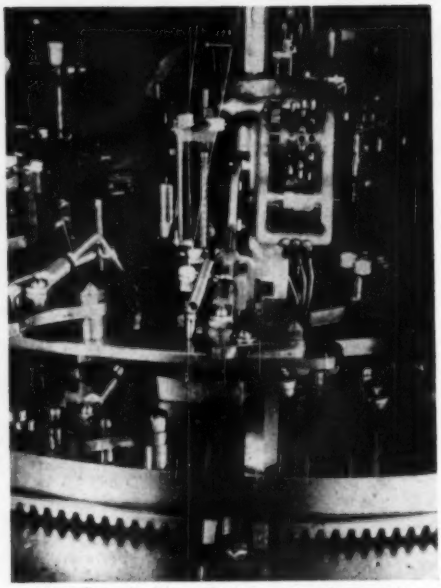
FOUNDED 1847 *North Adams, Mass.*

PREPARATION AND WET FINISHING EQUIPMENT FOR WOOL, WORSTED & SYNTHETICS

NEW STRIPER UNIT

Introduced by

LEIGHTON MACHINE COMPANY



"Leighton's New Striper Attachment."

A new striper attachment makes possible the selection of two, three, or four finger striping on each feed. The new striper takes up less space and is a compact unit which is readily attached or detached to each feed by two screws.

With this new drum style of striper the operator can make twelve changes on each feed without changing the control chain.

The old method utilized horizontal levers for control which took up considerable space and restricted the number of feeds. The new style striper uses a drum type control with vertically operated levers and takes up much less room.

This new method of changing yarns increases the number of combinations of colors and can be applied to all models of Leighton machines.

Write for details for your machines.

EIGHTON
MACHINE
OMPANY
MANCHESTER
NEW
HAMPSHIRE
INCORPORATED—1894

between one portion of the pattern and another. Sometimes, a "misfit" can be corrected by painting in the portion of the screen causing the trouble; but usually tightening-up of the screen is the best answer.

When the scraper is passed back and forth across the slack portion of the screen, it is obvious that the screen will move very slightly from one printed portion to another and so pick up some color from adjacent damp printing impressions. This movement gives rise to slight smudging as the screen is used in successive printing positions. On long runs of prints, "picked-up" print paste is built up on the underside of the screen, so that soiling becomes more pronounced. Slight over-lapping of one color upon another takes place because of the movement of the slack screen under the pressure of the scraper.
screen under the pressure of the

When a very poor job has been done in attaching the screen to the frame, creasing and wear can take place. A slack area may gradually develop a crease, which under the constant pressure of the print blade will finally break through, thus rendering the screen useless. Slack screens may sometimes be adjusted and rendered taut by inserting small pieces of wood between the frame and the gauze. This remedy often will make a screen last for the duration of a printing run. Such a correction, however, can so distort the pattern, because of the extra tension, that the screen is thrown out of fit. Again, a new screen must be made.

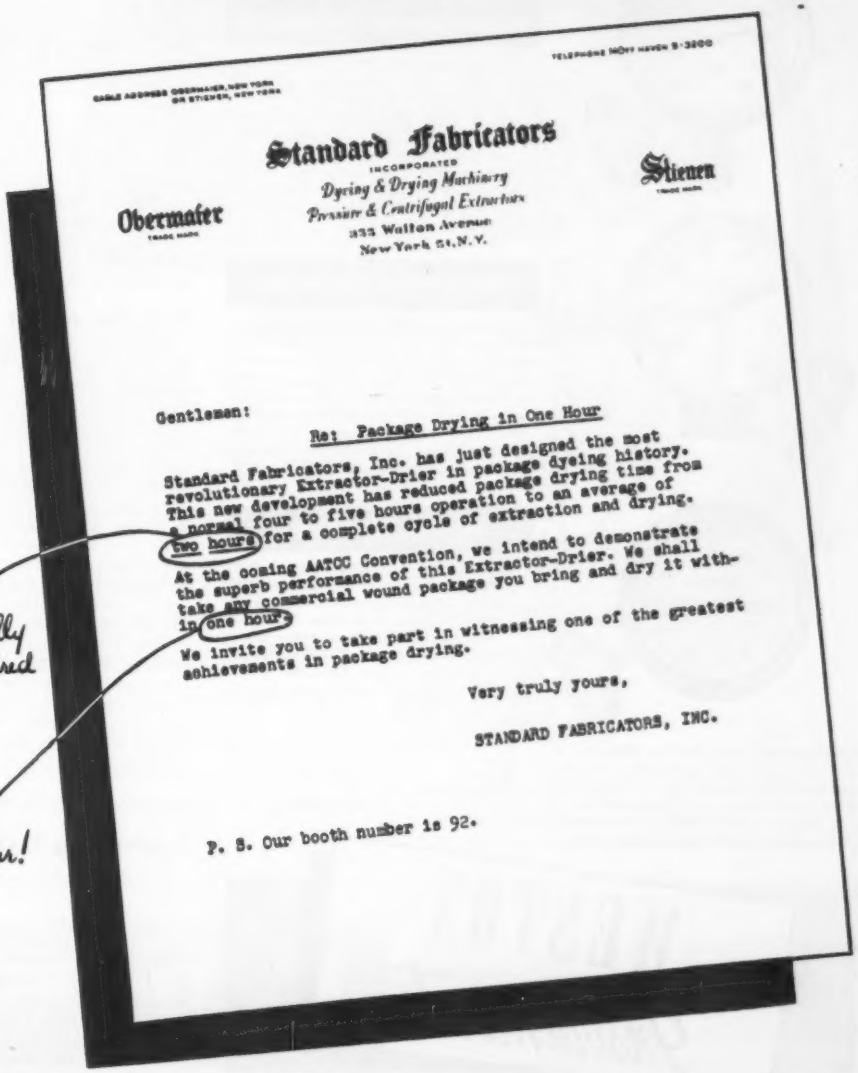
Stainless Steel Harder to Dent

It was thought when metal screens were first developed that they would completely replace silk and synthetic ones. This change has not happened, for although fiber screens are more easily damaged and are less resistant to chemical attack than the metal ones, they are still generally employed. A slight dent, which can easily occur on a metal screen, produces a defect which is repeated each time the screen is used. The dent, whether large or small, is very difficult to remove.

Copper and phosphor-bronze screens are easily damaged, and any impact on the screen is likely to cause a dent. The damage shows up as a darkened printing area in the vicinity of the dent and cannot be corrected by varying the pressure of the scraper blade. Screens of stainless steel, which are harder than copper and bronze screens, are less likely to be damaged by impact. They are more resistant to chemical attack and are being used more in screen printing.

Poor prints are likely to result if the

An open letter to package dyers



CABLE ADDRESS OBERMAIER, NEW YORK
OR STIENEN, NEW YORK

TELEPHONE MOrningside 8-3800

Standard Fabricators
INCORPORATED
Drying & Drying Machinery
Pressure & Centrifugal Extractors
233 Walton Avenue
New York 51, N.Y.

Obermaier TRADE MARK

Stienen TRADE MARK

Gentlemen:

Re: Package Drying in One Hour

Standard Fabricators, Inc. has just designed the most revolutionary Extractor-Drier in package dyeing history. This new development has reduced package drying time from a normal four to five hours operation to an average of two hours for a complete cycle of extraction and drying.

At the coming AATCC Convention, we intend to demonstrate the superb performance of this Extractor-Drier. We shall take any commercial wound package you bring and dry it within one hour.

We invite you to take part in witnessing one of the greatest achievements in package drying.

Very truly yours,

STANDARD FABRICATORS, INC.

P. S. Our booth number is 92.

or practically in any desired time

Yes, 1 hour!

WESTON *Readable* ALL-METAL THERMOMETERS

—AVAILABLE IN THESE 3 TYPES

STANDARD INDUSTRIAL THERMOMETERS

All-metal dial types with stainless steel stems, in straight and angle forms. Scale lengths 3"—6" and 9", with stems from 2½" to 72". Available as testing thermometers, and for general purpose and heavy duty service. Ranges from −100 to +1000°F. All-metal construction prevents breakage, assures dependable accuracy for longer periods.

CONTACT MAKING THERMOMETERS

Combines the features of the all-metal indicating thermometer with an alarm or control device. Has adjustable contact arm mounted in the glass and bezel. Supplied to make contact on increasing or decreasing temperatures. Has positive magnetic type contacts. Contact rating . . . 100 ma at 110 volts a-c; 50 ma at 110 volts d-c. Stem lengths 2½" to 24".

MAX-MIN® THERMOMETERS

Equipped with a manually set red index which moves up or down scale with pointer, remaining at extreme temperature reached until reset. Thus one reading gives present temperature, and maximum or minimum reached since last reading. Available in scale lengths of 6" and 9"—stem lengths 2½" to 24".

Literature describing Weston all-metal, as well as electrical and glass thermometers, sent on request. WESTON Electrical Instrument Corporation, 637 Frelinghuysen Avenue, Newark 5, New Jersey . . . manufacturers of Weston and TAGliabue instruments.

WESTON *Instruments*

screen-printing table doesn't have a level surface and is not supported solidly. The print mark will not be sharp, and the colors will not be deposited evenly.

Many materials have been suggested and are in use. Concrete- and slate-top tables are perhaps the best when they have been smoothed and carefully leveled. Wooden surfaces made of hard woods are also satisfactory, although swelling of these surfaces can occur if the moisture from the printing paste penetrates into the wood.

Some printing tables are covered with asbestos and fiberboard sheets. Also, metal tops and various plastics have been used for surface covering with varying degrees of success. Selection of tops for print tables depends a great deal on the type of heating used.

If the tables themselves are heated, metal and plastic covers are likely to warp, so that the surface becomes uneven. If the table is heated from overhead by means of hot-air ducts, almost any type of solid-sheet covering will be satisfactory, provided the table itself is solid and the sheets are put down so that the surface is level.

Solid Floor A Must

In laying out a print table, a solid floor and substantial foundation are necessary. Otherwise, a table of average length (about 50 yd.) may soon develop dips and sags. Printing impressions will then, of course, vary and show up as heavy and light places on the length of cloth. When this condition develops, it is better to work the scraper lengthwise of the table instead of across. In order to work lengthwise properly, two printers are required instead of the usual one, and a steady pressure must be employed throughout each printing stroke. Eventually, releveling of the printing table usually becomes necessary, a rather expensive and time-consuming operation. It is best to be sure that the table itself is firmly erected in the first place, and that the right type of surface is used.

Interviewing Techniques

(*Continued from page 145*)

terpret them, the success of the program depends entirely upon his good judgment and common sense.

J. D. Woods & Gordon, Inc., management consultants in Greensboro, N. C., who have also worked with the patterned interview in the textile industry, use the following equation

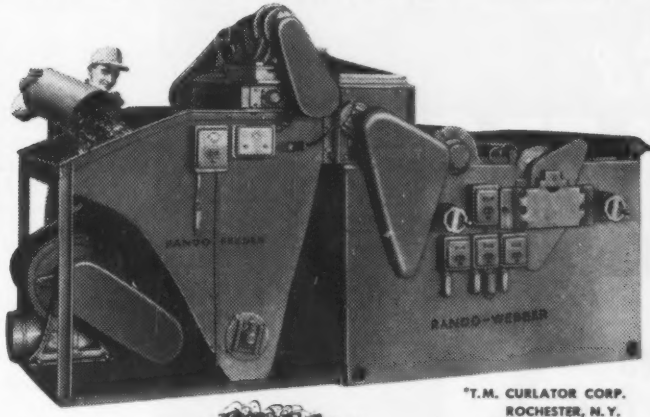
Don't Waste WASTE FIBERS...

. . . the low grade materials used by

RANDO-FEEDER* and RANDO-WEBBER*

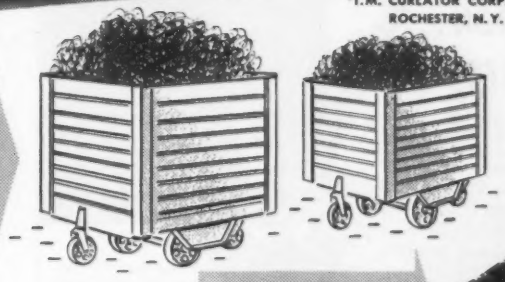
cannot be duplicated on any other machine

WHEN A MACHINE LIKE THIS

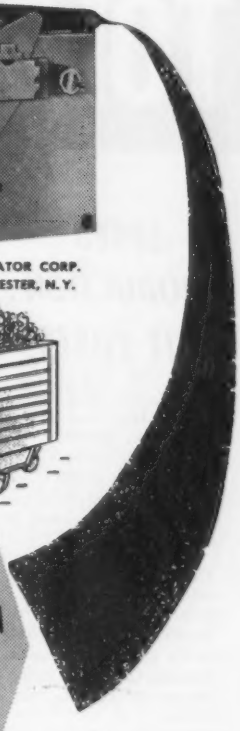


*T.M. CURLATOR CORP. ROCHESTER, N. Y.

CAN TURN WASTE FIBER LIKE THIS



INTO VALUABLE PRODUCTS FROM RANDOM WEBS LIKE THIS



It will pay research and product minded people to inquire about the

RANDO-FEEDER and RANDO-WEBBER

Inquiries are invited from research people who are developing entirely new products . . . *not necessarily textile* . . . where other materials are used in conjunction with waste fiber. Startling results are being obtained.

Write today.

TEXTILE DIVISION
CURLATOR
CORPORATION
ROCHESTER 10, NEW YORK

Curlator Corporation, Textile Division
585 Blossom Road, Rochester 10, New York

- ☐ Please schedule a demonstration
- ☐ Please make up samples from my own waste
- ☐ Please send Random Web Bulletin 101

NAME.....

COMPANY.....

ADDRESS.....

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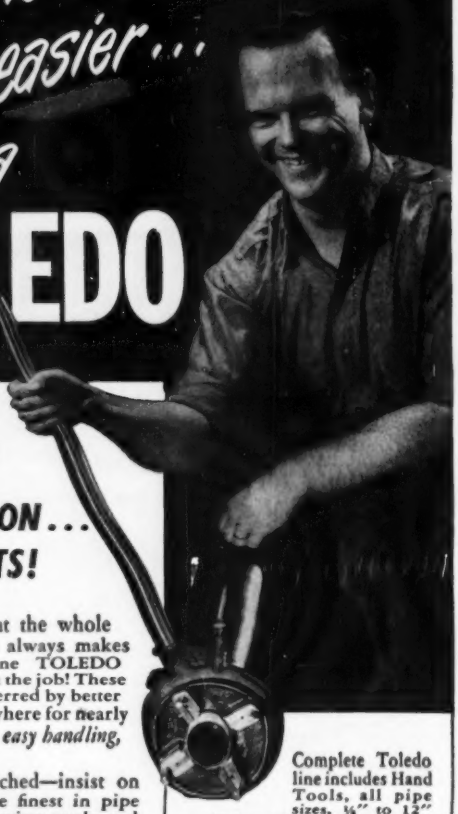
Sure it threads faster and easier... it's a

TOLEDO

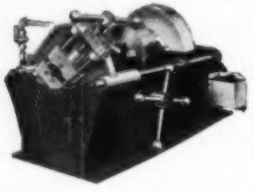


SPEED PRODUCTION... CUT COSTS!

He's happy about the whole set-up! His boss always makes sure that genuine TOLEDO Pipe Tools are on the job! These are the tools preferred by better mechanics everywhere for nearly half a century... *easy handling, faster cutting.*

Don't be switched—insist on TOLEDO for the finest in pipe threading and cutting tools and power machines! See how quickly Toledo dies take hold... how easily they cut smooth, accurate threads. Check the many advanced features of Toledo Pipe Tools... designed to speed the work and assure fast make-up and trouble-free joints. You'll be better satisfied with Toledo dependability! Write for catalog. The Toledo Pipe Threading Machine Co., Toledo, Ohio. New York Office: 165 Broadway, Room 1310.

Complete Toledo line includes Hand Tools, all pipe sizes, ⅛" to 12" and ¼" to 1" bolts. Power pipe machines, up to 2" and 4" capacity. (Above)—Toledo No. 1R Threader, 1" to 2" pipe.



Toledo #999 2" pipe machine, wheel or knife cut-off.

RELY ON THE LEADER

TOLEDO

PIPE TOOLS... POWER PIPE MACHINES... POWER DRIVES

in defining the interview for clients.

Person Can Do — Person Will Do

(tests) Ability plus (Interview) Personality = Ok Worker

In other words if a worker shows what he can do by passing an aptitude test, it doesn't necessarily follow that he is automatically going to become a top piece-work producer. The fact that an individual can do a job is meaningless unless he really wants to do it.

The Psychological Corp., 522 Fifth Ave., New York, N. Y., which was among the first to develop clinical interviewing techniques for industry and to begin the scientific training of interviewers, shares this view in one of its recent annual reports. The report states that "Basic abilities, aptitudes, and performance levels are measured by appropriate tests, whereas personality traits such as emotional maturity, willingness to work hard, adaptability, dependability, and loyalty are determined by a comprehensive guided interview."

Training of Interviewer Important

Some management people feel that the patterned interviews, like other personnel devices that tend to reduce human qualities to a matter of prediction and cold estimation, are limited in their application. They feel there is no substitute for the wisdom, skill, and foresight of a well-trained, capable, and experienced interviewer.

That is true. Patterned interview form, tests, and all the rest of it are useless in themselves. The skilled interviewer, however, using his own good judgment together with intelligent use of interview time and appropriate aptitude tests, can reduce the element of risk and guesswork in present-day hiring. He may in fact predict to a large extent the relative chances for success of a given individual on a particular job. The advocates of the "guided" interview go along with this thought. They propose not only use of the forms but adequate training of the interviewer in the basic "know how" of approach, courtesy, ability to listen, and all the other details that make up the structure of an effective conversation—not examination.

With our thoughts thus zeroed in, we may take a look at some of the experience in the textile industry with controlled interviewing.

Van Raalte's Labor Turnover Reduced

"Our experience with the controlled interview as devised by the Psychological Corp. began shortly after the war on a limited scale," says Mr. T. J. Griffis, Manager of Indus-

Make Better LAUNDRY NET...

increase production, too, with a

Kidde Knitter!

YOU CAN MAKE THESE FABRICS, TOO, WITH THE KIDDE KNITTER

1. Elastic Fabrics for corsets, girdles and brassieres
2. Hair Nets
3. Nettings and Veilings
4. Dishcloth Material
5. Curtain Fabrics
6. Narrow Fabrics
7. Shoe Cloth
8. Knitted Outerwear Fabrics for sweaters and polo shirts

Laundries like the long-lasting qualities of nylon net made on the Kidde Knitter. Each end is anchored to make the net runproof... to prevent snagging holes from spreading. Better penetration of washing solutions is possible because the Kidde Knitter can produce net with wider mesh.

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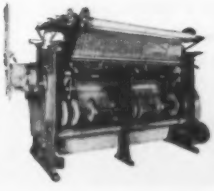

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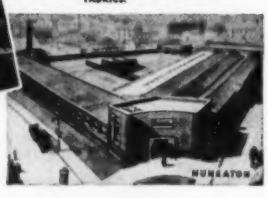

The Mellor Bromley range of top-line machines covers most classes of underwear and outerwear fabrics and garments. Send for illustrated leaflets of the types in which you are interested.

Here are five of the principal plants of the Mellor Bromley group in England, employing some 3,000 workpeople—many with 25, 40 and 50 years service.

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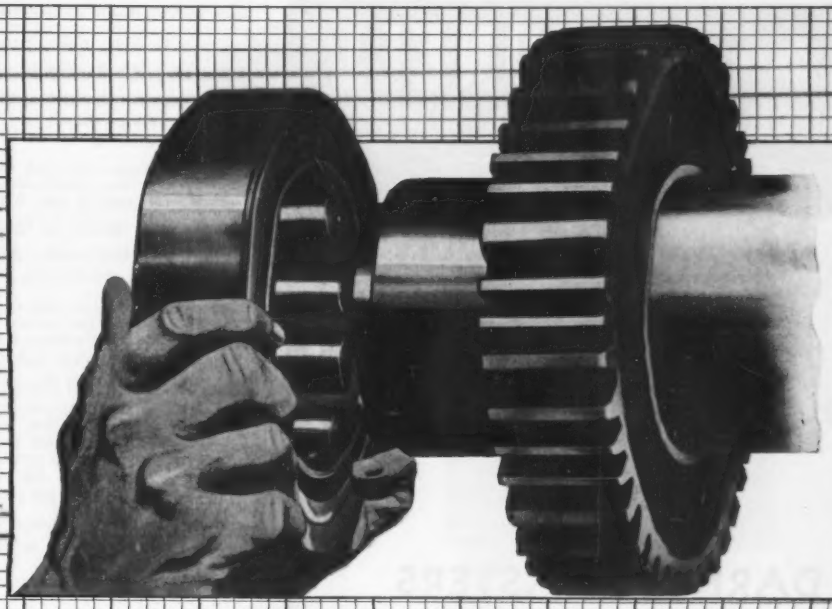
trial Relations, Van Raalte Co. "This was in response," points out Mr. Griffis, "to what is probably the same need throughout all industry; namely, the better selection of long-term employees, better placement of people on jobs corresponding to their skills and temperament, and the elimination of the 'floaters' who have neither the intention nor aptitude to remain on the job very long."

In addition to the above reasons and the goal of cutting labor-turnover costs, the Van Raalte Co. was also interested in obtaining more complete and accurate background information about each new "Van Raalter" being hired from the post war labor market. Van Raalte also wanted to help the new employee adjust to his job more rapidly by giving him a thorough briefing on all company policies, pay systems, and rules affecting his daily working life. "The controlled interview, therefore," declares Mr. Griffis, "has been an occasion of giving information as well as obtaining it. Its pattern is useful in saving the interviewer's time and is valuable in putting the applicant at ease."

Actual labor-turnover figures at Van Raalte justify this endorsement of the controlled interview. According to Mr. Griffis, between July, 1947, and July 1, 1950, an average of 4,000 people were employed at 12 locations by the Van Raalte Co. During this period, total turnover among the 4,000 people employed was 31.5%. In four locations employing 880 workers out of the total 4,000, where the controlled interview was used consistently during the July, 1947, to July, 1950, period, the average labor turnover was 19.8%. In two locations employing 1,830 workers out of the total 4,000 employed by the company, for the same period, where the controlled interview was used only intermittently, the total turnover was 24.8%. And finally, in six locations employing 1,290 employees out of the 4,000 where the guided interview was not used at all, the labor turnover was 48% for the three-year period. These percentages are comparative rather than actual, however, since employees on leave of absence were included in the turnover figure.

In one of the locations where the selection program had been set up and interviewers trained, manpower shortages became so critical that many individuals applying for employment at this Van Raalte plant were hired even thought they did not fully meet the qualifications. It was decided, however, to go ahead and use the interview program, rating each individual employed on a five-point scale; excellent, very good, average, below average, and poor, at the time of hiring. Since



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many of Van Raalte's production jobs are sewing-machine operations set on a piece-work basis, it wasn't too difficult after a few months of employment to figure out a new employee's interview rating against his actual piece-work performance on a given job.

The accompanying chart shows a breakdown of this relationship. This breakdown translated into hard dollars and cents would be enough to convince even the toughest mill man that controlled interviewing is not a frill item.

The Van Raalte Co. feels the above experience proves the merits of the interview. Mr. Griffis states, however, that his company does not by any means feel that this is the answer to all its labor-turnover and employment-placement problems. "Nor can our results be wholly attributed to use or lack of use of patterned interviews."

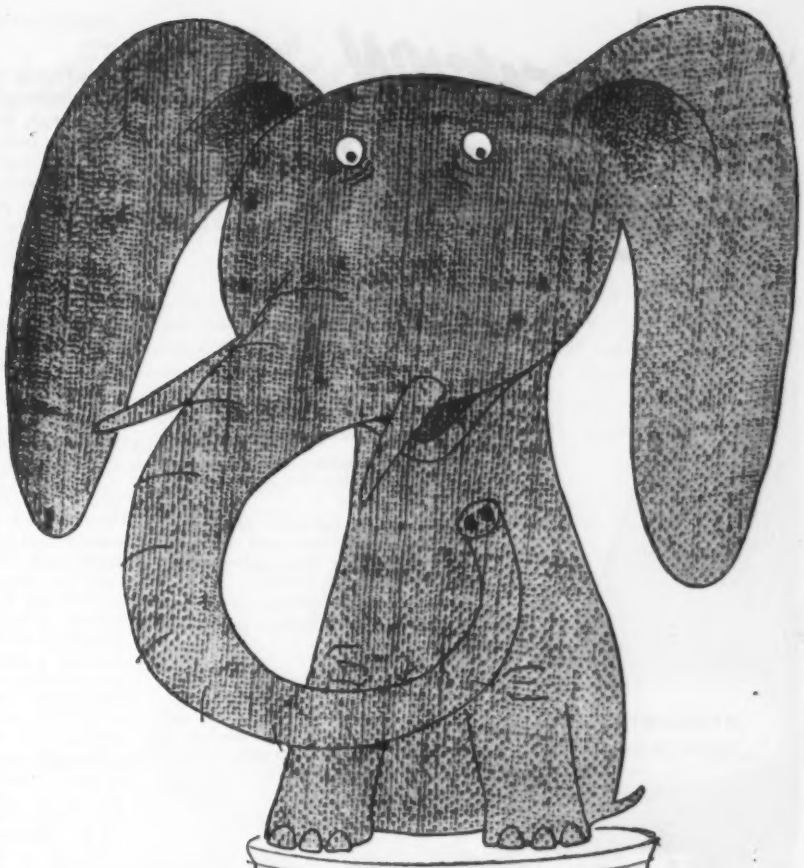
In some areas, adds Mr. Griffis, "competition for competent applicants is so keen that it isn't always possible for the interviewer to be as 'choosey' as he would like to be."

During the initial hiring routine, Van Raalte does not depend on the interview alone. It has taken advantage of the testing service of the local U. S. Employment Service. The U. S. E. S. has made available to Van Raalte tests for almost every operation in its mills. While these tests have not been wholly successful in showing Van Raalte a prospective worker's skill or aptitude, they have been useful in demonstrating a lack of aptitude when it occurs. When it can be arranged, Van Raalte interviewers review test scores prior to actual interviews in order to save time and try to interview the best prospects first.

Van Raalte goes one step further with the controlled interview in its belief that a controlled follow-up interview is as important as the initial-employment controlled interview. This belief is based on the idea that the most detrimental labor turnover in the textile industry is experienced during the first three months of employment.

Mr. Griffis' general conclusion is that the guided interview should really be applied "on more than one occasion for the best results, and should be augmented by a fully rounded program of proper communications, supervisory training, job training, and recreational activities. Needless to say, rates must be fair and grievances settled promptly and equitably if the turnover problem is to be reduced to a minimum."

After five years of experience with an improved interview, Van Raalte is continuing to use it effectively in a



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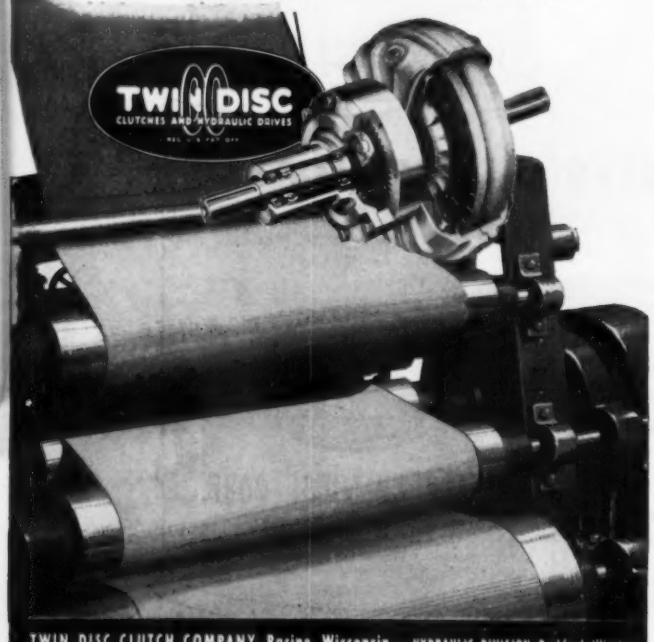

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program that operates under no illusions.

Aberfoyle's New-Plant Experience

Aberfoyle Mfg. Co. is also working with the controlled interview. Aberfoyle has had a past interview experience similar to that of the general industry practice. In its Chester, Pa., plant, for example, the familiar personal-history blank has been used. Standard questions were asked on this blank, such as, where does an applicant live, where has he worked, where born, and so on. Applicants were more or less selected on their face value. "Green" personnel were trained and rate increases followed as the individual progressed. Turnover was relatively low, probably because most applicants were either friends or relatives of employees of long standing.

In building its new plant in Bridgeton, N. J., [TW, Oct. '50, p. 112], Aberfoyle was moving into a community that never before had any textile mills. This meant that Aberfoyle was going to have to start from scratch with the training of most applicants. One of the critical skills required was quilling, and it looked like a tough proposition to detect good prospects from those who might prove emotionally insecure and who would not be able to take the monotonous routine of the work once on the job.

Aberfoyle was anxious to avoid unnecessary initial hiring mistakes. According to their personnel director, Miss Marian Way, the idea was to "fit the right man to the right job and build up an organization of stable, happy, and productive workers as quickly as possible." It was with this in mind that they enlisted the services of Robert N. McMurry & Co., Inc., to help set up a selective-hiring program as up to date as their new plant.

This situation would seem to provide an almost ideal opportunity to start interviewing with a wholly new approach. Here is how the plan now works. A Bridgeton resident applying for a job at Aberfoyle is first greeted by a receptionist who makes certain judgments based on Aberfoyle preliminary hiring standards. These include, age, distance from home to job, size, and other such facts. Size is important. It is pointless to hire a short man if he is wanted to operate a big machine. Interviewers have been known to do this!

Once the applicant passes this phase, he is given a formal application to fill out and is then interviewed by the personnel director who uses the patterned-interview form. "The patterned interview," says Miss Way, "is a step-by-step selection plan by which we are able to record facts as they are

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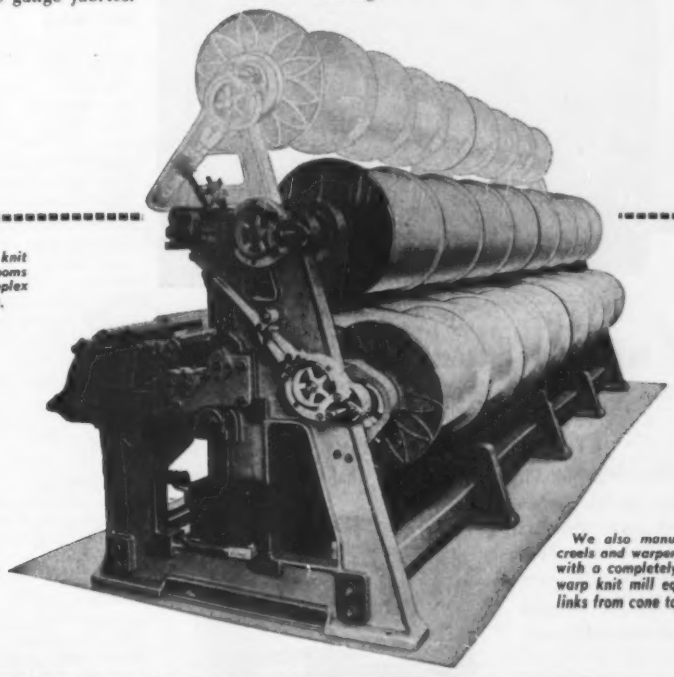

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given." In conjunction with the interview, an intelligence test is given to plant and office applicants. The McMurry forms are also used to check on previous employers and school background. Following the tests, interview, and checks, a general rating is applied. Physical and eye tests also are inaugurated. If the applicant is qualified for the specific job in question, he is told about mill policies by the plant manager personally and is cleared for work. "Everything is done in a very informal and friendly manner," adds Miss Way. "We have a definite training program and follow up on jobs. We are keeping in close touch with our employees and believe that this is establishing a feeling of trust and confidence."

While the program at Aberfoyle is still new, management at the Bridgeton plant feels that real progress has been made toward its target of obtaining productive and well-adjusted workers.

Dan River—Use in Production and Sales

The activity and experience of Dan River Mills in both its New York offices and its plant in Danville, Va., are interesting. Mr. Wesley Hobson, office manager of the Dan River Mills office in New York, is utilizing the patterned interview in a selection program he helped set up for screening of sales candidates. The patterned interview has proved useful to field sales managers who pass on the selection of sales trainees. The sales manager, since he is not essentially a personnel man, uses the patterned-interview form as a guide to prompt his memory to cover all the necessary areas in the final stages of screening. The accompanying illustration shows how the over-all selection program works.

Mr. W. C. Daniel, employment manager of the Dan River plant in Danville, Va., tells us that while the patterned-interview forms have not been used, a clinical-interview technique has been developed. "We, like all other progressive companies," says Mr. Daniel, "recognize that labor is one of our biggest cost items. It naturally follows that the more information we can get from a job applicant concerning his background, his likes and dislikes, and, more important, his job interests, the more likely we are to place him where he will produce the best quality goods at the lowest cost."

"We have found," says Mr. Daniel, "that college graduates in psychology with practical mill experience make the best men for this particular type of interviewing." In order to select and train such people in the beginning, which was shortly after the last

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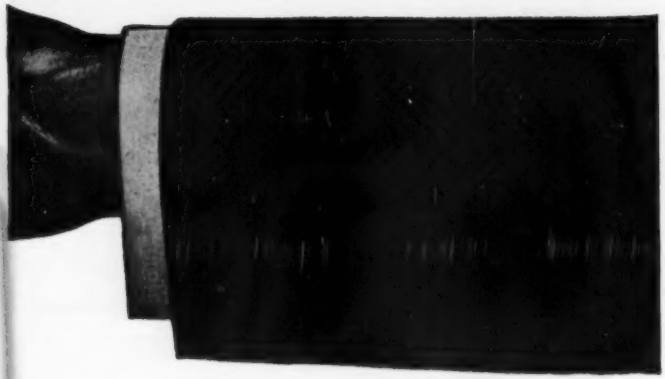

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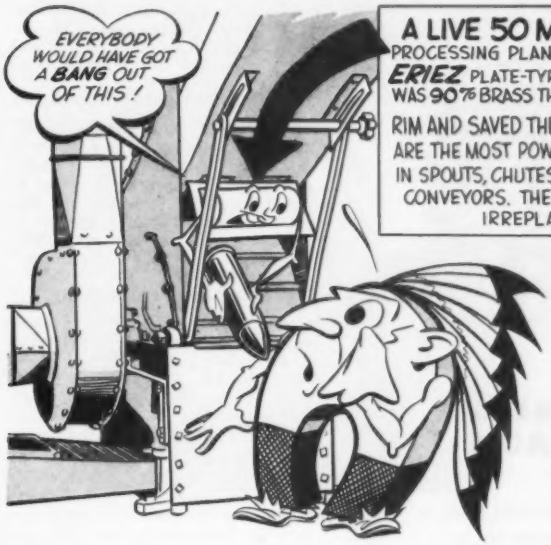

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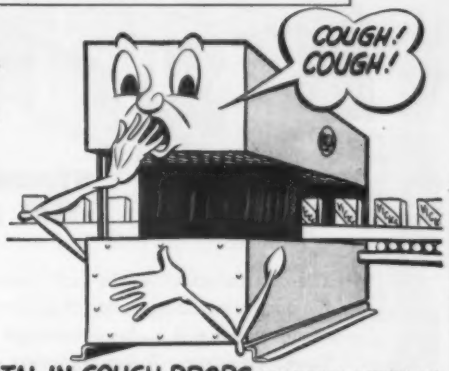

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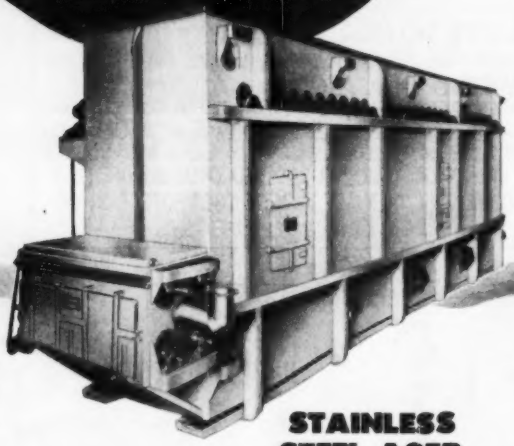

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war, Dan River brought in the consulting firm of J. D. Woods & Gordon to help them get the program going. Interviewers were thus trained in the best techniques known and shown how to write up personnel-evaluation reports and interpret job-evaluation forms. Dan River, in conducting its clinical interview, is most concerned with a job applicant's demonstrated skill and ability, what makes him tick, how dependable he is, and how mature. All interviewers have been briefed on the meaning of these terms. Dan River Mills, like the Aberfoyle Co., tries to interview in a careful and friendly manner. This policy is working.

"One look at our turnover figures today as compared to the period immediately preceding the installation of this program convinces us," concludes Mr. Daniel, "that the program is sound and that it pays dividends. The greatest value, however, is reflected in better morale among employees brought about by better placement."

Bigelow-Sanford's System

Bigelow-Sanford Carpet Co., whose personnel program is nationally known, is also familiar with the patterned interview. Mr. A. L. Coombs, manpower advisor for the company, attended the Robt. N. McMurry training course for interviewers and has in turn presented this training to local interviewers at the Thompsonville, Conn., and Amsterdam, N. Y., plants. While Bigelow feels the patterned-interview forms are excellent, the company is even more interested in the training of its interviewers. Mr. Coombs points out that this attitude is one of realizing that many more job applicants are turned down than can possibly be hired. Mr. Coombs says that the Bigelow interviewers have been instructed not to burn any bridges. The idea is to leave every turned-down aspirant with the feeling that "Well, I didn't get the job, but it sure is a wonderful place and if I buy a rug, I know what it will be!"

In order to accomplish this end, Bigelow, on the basis of its original investigation of the patterned-interview method, uses what it calls a multiple-interview system. This is a plan where several responsible company representatives, usually three or four, interview sales and executive candidates. The individual feels even if he isn't hired that he came to the attention of the officials who count and that his qualifications were accorded the courtesy of real attention. This program is carried on at the mills to a lesser extent.

These practical experiences, although they differ in problem and detail, point up the kind of positive

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results that have been obtained. In these days of expansion, renewed government orders, and defense production, it is apparent that many interview programs are inadequate. Indications are that more and more mills are taking a serious look at their present interview methods. The case for the controlled interview is going to be attractive to a lot of employers seeking an answer to their hiring difficulties.

Tricot-Fabric Engineering

(*Continued from page 132*)

ner total can be used as a unit if the total runners per rack are visualized as being two rigid lines (front runner and back runner) placed end to end to form one straight line, as in Fig. 1.

The runner totals used for study are plotted in Fig. 2 as a bar-and-curve graph, having the corresponding piece number at the top of the chart and reading to the left the corresponding total in inches. The line connecting the top of each runner total produces a graph of the runner totals.

If the bottom runner is considered as a constant of one, the ratio between the top and bottom runner in decimal form can be found by using a direct proportion. This ratio will give a convenient number with which to work in plotting a graph.

Formula

R : 1 : : Top runner : Bottom runner,

or

$$\frac{R}{1} = \frac{\text{Top runner}}{\text{Bottom runner}}$$

Example 1

Given: R = ratio
Top runner = 70 in.
Bottom runner = 56 in.
Total runners = 126 in.

Solution: R : 1 : : 70 : 56

$$\frac{R}{1} = \frac{70}{56} \text{ or } \frac{R}{1} = \frac{5}{4}$$

$$R = 1.25$$

Example 2

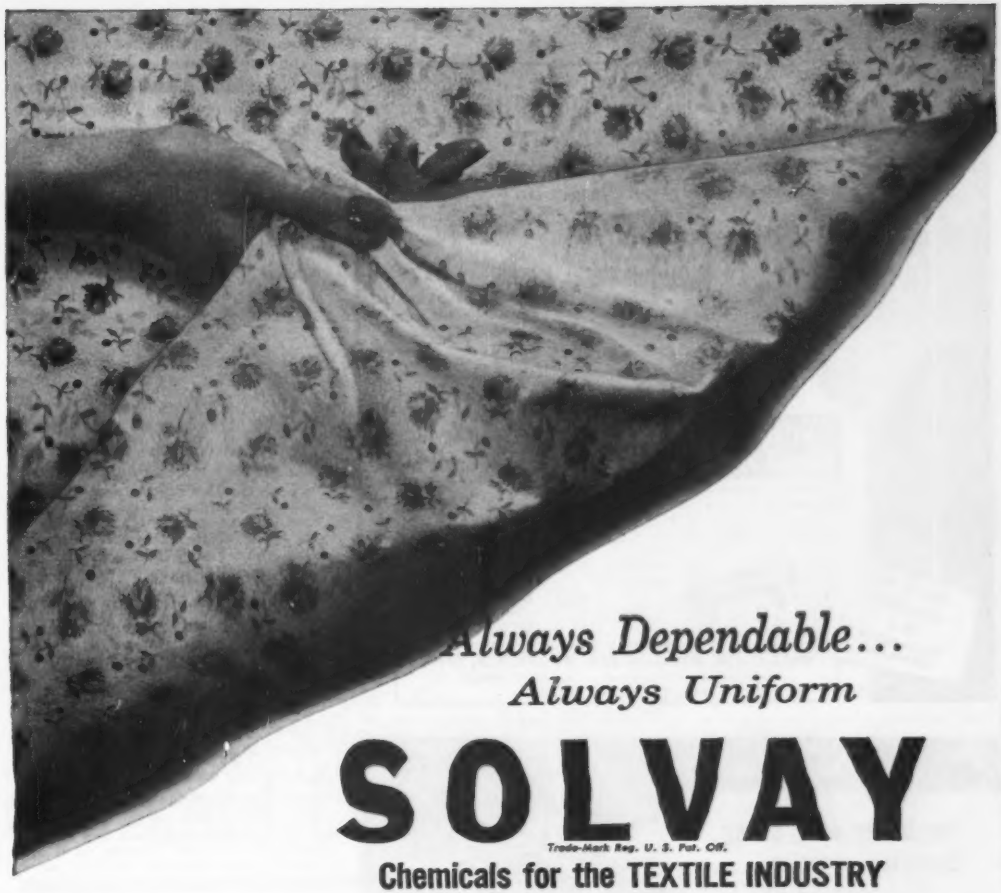
Given: R = ratio
Top runner = 72 in.
Bottom runner = 54 in.
Total runners = 126 in.

Solution: R : 1 : : 72 : 54

$$\frac{R}{1} = \frac{72}{54} \text{ or } \frac{R}{1} = \frac{4}{3}$$

$$R = 1.33$$

From Example 1 a total of 126-in. is used for the "run-in" per rack having a ratio of 1.25 (5/4 ratio). In Example 2 the same total is used of 126-in. of "run-in" per rack but has a ratio of 1.33 (4/3 ratio). It is easy



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to see that even though the same amount of yarn is knitted per rack the ratio can be varied.

Considering the bottom runner as a constant of one, Fig. 3 shows the variation in the ratio of the runners used.

Effects of Runner Changes

A change of one runner changes the quality or courses per inch of the fabric when it is off the machine. The courses per inch were counted at five different places on the fabric and averaged. Since four sets of each construction were made, the results from corresponding fabrics were averaged to derive the courses per inch for each fabric construction. In Fig. 4 the courses per inch as measured on the machine and the courses per inch as measured off the machine are plotted. The graph shows that only two qualities were knitted on the machine. This was done purposely. It is easy to see that the courses per inch or quality of the fabric on the machine is not necessarily the same off the machine.

In some instances a slight change in one runner apparently does not change the courses per inch (see Fig. 5—C.P.I. of fabric Nos. 10, 12, 13, and 14).

However, since only 1 in. at a time was counted and a fraction of a course either way was dropped before the average was taken, and since these instances are few, it is felt that a variation of one runner, either front or back, does affect the courses per inch when the fabric is off the machine.

If the courses per inch are not affected by a runner change, or if different runner lengths give the same courses per inch, the wales per inch will then reflect the runner change (see Fig. 5—C.P.I. and W.P.I. of fabric Nos. 10, 12, 13, and 14).

Bursting Strength Improves Slightly with More Courses

Bursting-strength tests were made with the ball-burst attachment on the Scott Tester. An approved type of pendulum was used. Five breaks were made and averaged for each fabric. The specimens were conditioned 24 hr. before being tested in an atmosphere having a relative humidity of 60% and a temperature of 75° F.

The fabric bursting-strength tests first were plotted for each of the four sets of fabrics made, and it was found that slight differences existed between each set. However, since the charts were magnified in order to find a better picture of the trend, it is believed that these discrepancies are negligible, for the trend of all is in the same direction. The ball-burst averages of

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the corresponding constructions are plotted in Fig. 6.

Increased Runner Lengths Give a Higher Yield

In the trade, the term yield usually is used in reference to the finished fabric.

For finding the gray yield in this study, laboratory methods were employed. A 2x2-in. die was used to cut five specimens from the relaxed fabric. Each specimen was weighed in grams to four decimals and then an average was found. The yield was computed by the use of the following formula:

$$\text{Yield in sq. yd. per lb.} = \frac{1.4^*}{\text{wt. in grams}}$$

The gray yield for each fabric was plotted first, and it was found that slight differences existed between the four sets. Since the charts were magnified in order to present a better picture, it is believed that these discrepancies are negligible for the trend of the four sets was in the same direction. The average gray yields are plotted in Fig. 7.

* The constant 1.4 is a conversion factor for a 2x2-in. (4 sq. in.) specimen only.

Here Are the Principles That Resulted

1. Quality, or courses per inch as measured or counted on the machine, as a rule, is not the same as when counted off the machine and the fabric is relaxed (see Fig. 4).

2. A change in length of one runner, as a rule, changes the quality or courses per inch of the fabric off the machine even though the quality on the machine is not changed (see Fig. 4 and Fig. 5).

3. If a change in one runner does not change the courses per inch when the fabric is off the machine, the change will be reflected in the wales per inch (see Fig. 5).

4. Tight qualities (more courses per inch) are produced with short runner totals, and as the runner totals increase the quality becomes looser (less courses per inch) but not proportionally (see Fig. 8).

5. Ratio affects courses per inch. From the limited number of ratios used it appears as though the courses per inch increase when the ratio increases, and the courses per inch decrease when the ratio decreases for the short runner total (see Fig. 8). This effect tends to reverse itself for the longer runner totals. It is felt that more research is necessary to determine the magnitude of the effect of ratio on courses per inch.

6. In general, the ball-burst test

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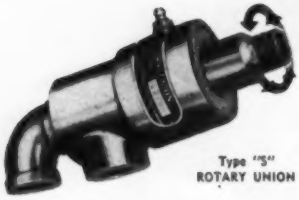

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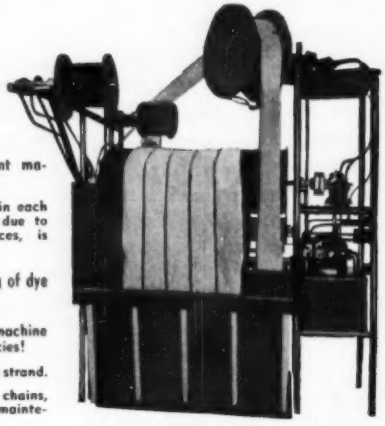

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shows the fabric to be stronger with more courses and a tendency to become weaker with less courses per inch, but not proportionally (see Fig. 9).

7. Ratio affects fabric strength. By using the same amount of yarn per rack and changing the ratios, a different ball-burst reading is obtained. The optimum appears to be in the vicinity of a 1.25/1 or 5/4 ratio, slightly below 1.25/1 for short-runner totals and slightly above 1.25/1 for long-runner totals (see Fig. 9). However, it is felt that the data are insufficient to draw a definite conclusion, and it is believed that each individual amount of yarn "run-in" per rack will have its individual ratio for optimum strength. This individual optimum ratio is often referred to as balancing of the stitch.

8. Runners affect yield. Increased runner lengths give a higher yield (Fig. 10).

9. Ratio affects yield. Using the same amount of yarn per rack and by changing the ratios, a different yield is obtained (see Fig. 10–fabric Nos. 15 and 16). It appears as though a higher yield is obtained when the ratio is in the vicinity of 1.25/1 or 5/4, slightly below 1.25/1 for shorter runner totals and slightly above 1.25/1 for longer runner totals. However, as noted in Conclusion 7, it is felt that the data are insufficient to draw a definite conclusion, and it is believed that each individual amount of yarn "run-in" per rack will have its individual ratio for optimum gray yield.

10. A change in the length of one runner affects ratio, courses per inch, gray yield, gray-fabric strength, the total length of yarn knitted per rack, and balancing of the stitch formation.

Bigelow Power System

(Continued from page 139)

applied in accordance with the latest engineering practice. The outdoor substation was replaced by indoor, metal-clad, high-voltage switchgear. High-voltage cables traversed the plant area to strategic locations selected for the stepdown load-center substations. The modernized system was planned to provide a dual source of power all the way to the 550-v. distribution buses. This distribution was accomplished by the circuit arrangement shown in the accompanying diagram. In addition, provision was made for easy installation of an outdoor, high-voltage, package-unit substation when and if the power company increased the transmission-system voltage.

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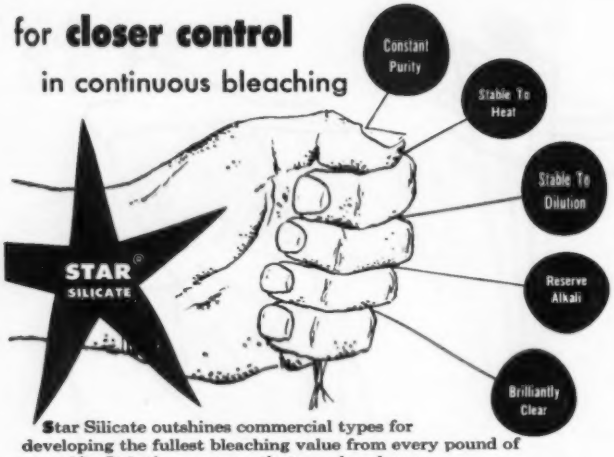

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Bigelow-Sanford's Problem a Common One

Much of the textile industry is faced with the problems that confronted Bigelow-Sanford Carpet Co. The present industry average is 1.4 kw.-hr. of energy consumed for each pound of finished product. These figures show why many electric-power systems have become overloaded as production was increased to new highs. Furthermore, the energy per pound ratio can be expected to increase as new methods and machines continue to lighten the burden of human labor.

system since present-day production has become so dependent upon continuous electric power. The accompanying power-distribution diagram indicates two sources of power entering a metal-clad bus. Feeder breakers divide the outgoing primary cables so that two different breakers supply opposite ends of each double-ended load-center substation. High-voltage, metal-clad switchgear is incorporated within the new system. The low-voltage tie breaker between the two 550-v. buses is the final step in the dual power supply that goes all the way to utilization circuits and assures the utmost in reliability.

The power company cooperated fully. A major change was made in the origin of the incoming lines to assure that at least one line will always be alive. The primary metal-clad switchgear is provided with automatic transfer control. One line is designated as the preferred source; if it fails the emergency line closes and restores power to the bus within 3 sec. When power is restored to the preferred line, the transfer is reversed automatically. Because of necessary power-company restrictions, it is not possible to parallel the two lines during the reverse transfer, hence a momentary interruption occurs upon return to normal. An audible signal notifies the operator when the preferred line opens, and he may choose to lock out the reverse transfer until a more favorable time.

Three-conductor, lead-covered, high-voltage cables are installed in some of the underground fiber ducts formerly used for 550-v. feeders. Only minor changes are required to reach the new substations. Double potheads at the primary switchgear and substations eliminate the need for cable splicing in manholes (except in one instance).

Company Engineers Outlined Requirements

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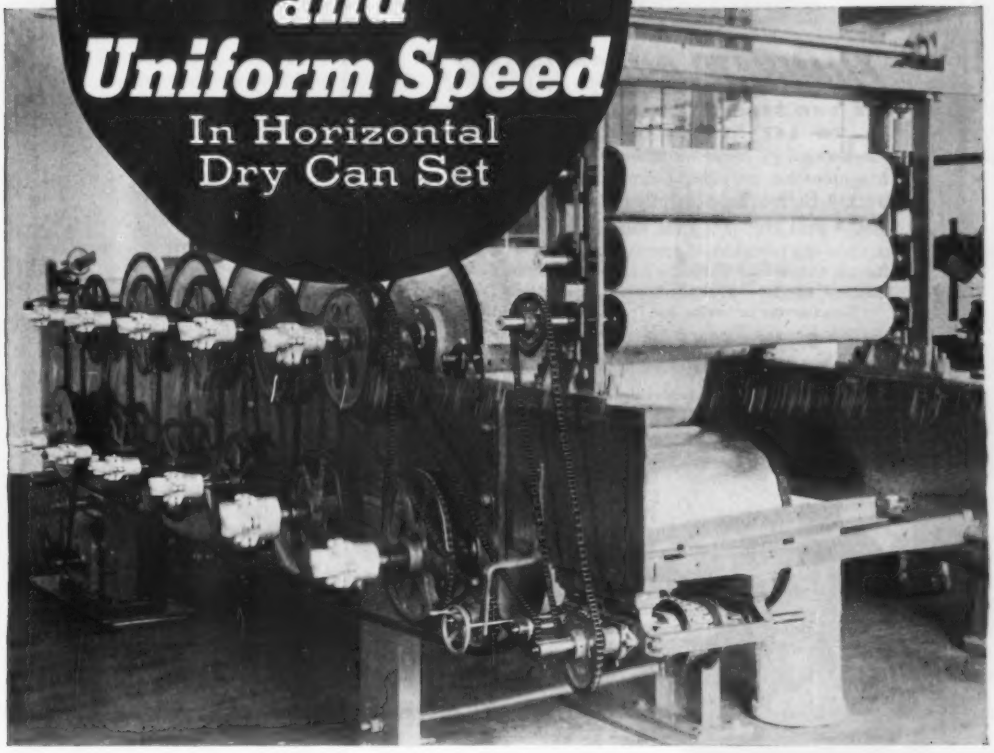

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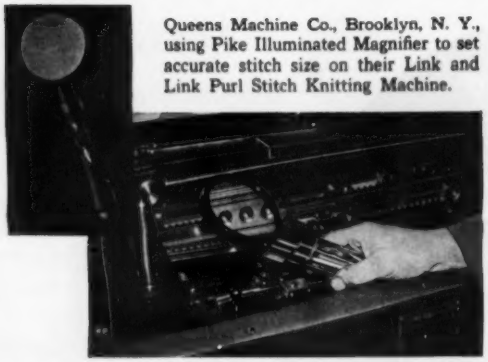

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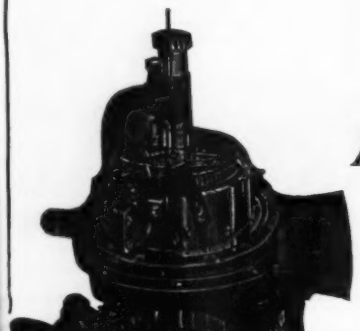

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CANADA

rangement was provided on all double-ended load-center substations at the request of Bigelow-Sanford engineers. Two separate cubicles, each containing a manual, gang-operated disconnect switch and potheads, are installed at each end of the substation. The switches are interlocked so that only one can be closed at any time. The older style of double-throw switch in a single enclosure is not considered safe or adequate for this application. The distribution diagram details the connections that permit emergency operation of both transformers in a given station from one feeder cable. With proper precautions, the scheme permits full use of both transformers when one feeder cable fails.

Four double-ended load-center substations plus one radial load-center substation were required. A total of 7,500 kva. of transformer capacity was installed.

Plan Was tailored To Building Layout

Many different conditions of load density and feeder length were encountered. Three large six-story buildings are of sufficient size to justify individual substations. In such cases, the existing 550-v. feeder circuits within a building are transferred to the new feeder breakers. The substations located in two other buildings each supply quite a large area of low-density load including shops, shipping, and storage. The feeders are necessarily quite long; but the loads are small, and oversize cables are used to minimize voltage drop. The actual number of feeder breakers required for each substation was selected to provide room for all existing circuits plus a generous number of spares. The distribution diagram is representative but does not show the actual number of secondary feeders.

The double-ended load-center substation carries out the idea of dual power supply right down to the secondary feeders. Normally the bus tie breaker at each station is open; interlocking is provided to prevent both transformer and bus tie breakers being closed simultaneously. In case of failure of one channel of supply, the proper transformer secondary breaker may be opened and the bus tie closed. This operation is manual and can be performed quickly to restore power to the affected bus section without primary switching. The total load of both bus sections is limited to the capacity of one transformer, but essential loads can continue to operate.

Dry-type transformers were selected by Bigelow-Sanford engineers for all substations. The principal reason was the advantage of less weight and ab-

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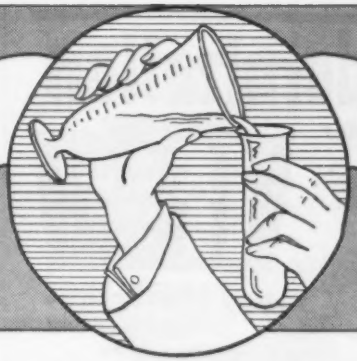

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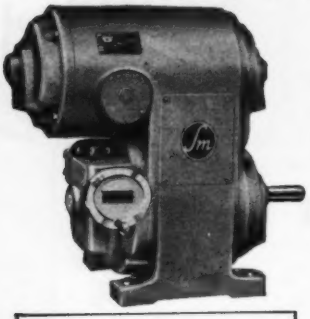

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- **PROCESS CONTROL OF:** Temperature—viscosity—level—pressure—flow—etc.
- **TIME CONTROL OF:** Baking—drying—heating—cooking—pasteurizing—soaking—chemical action—etc.
- **EQUIPMENT ADAPTATION TO:** Load variation—sequence synchronization. Size—tension—hardness or shape of materials to be processed—machined—conveyed—blended—mixed—etc.
- **VARIATIONS IN:** Quality—quantity—operators' abilities—etc.

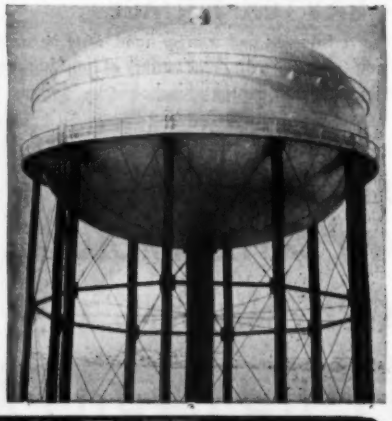
Ask for your copy of pictorial bulletin No. A-73 showing Sterling Electric Power Drives Turning The Wheels of Industry

STERLING ELECTRIC MOTORS

Plants: New York 51, N. Y.; Los Angeles 22, California; Hamilton, Canada; Santiago, Chile.
Offices and distributors in all principal cities.

TOPS IN TANKS

● Nearly a century of service to the textile industry gives Cole the know-how to design and erect elevated tanks best suited to the individual needs of your mill. Whether you require a tank capacity of 5,000 or 2,000,000 gallons, Cole engineers will give you the right design at the right price — for dependable, economical water service. We invite your inquiries.



R. D. COLE MFG. CO.

NEWNAN, GA. *Established 1854*

TANKS TOWERS CYLINDERS VESSELS

Advantages of Load-Center Substations

Installation of load-center substations, supplied by high-voltage feeder cable, near the factor load has several advantages.

1. Proper voltage is maintained by using short, low-voltage feeders.
2. Cable heating losses are reduced.
3. Reliability is improved and production delays are reduced.
4. Installation cost is minimized when factory-assembled equipment is used.
5. Proper short-circuit protection is provided by breakers with adequate interrupting ability.
6. Safety to factory personnel is increased because all live circuits are metal-enclosed. Positive disconnecting assures safety for maintenance men.

sence of liquid—an important factor since some units are located on an upper floor of the factory.

Substations Are Pressurized

All substations are located in special enclosures within the factory buildings. These enclosures are pressurized to prevent entrance of dust and lint that might otherwise clog the air passages of the dry-type units. Protection against lightning is provided by two groups of arresters, one at the transmission-line termination and the other where the 13.2-kv. lines enter the switchgear. Extra precaution is required because dry-type transformers have a lower impulse rating than liquid-filled units.

Each bus section of each double-ended substation has one feeder position assigned to supply lighting transformers only. Lighting circuits in the multistory buildings are arranged so that half of each floor is supplied by a small, single-phase, dry-type lighting transformer. The lighting transformers are divided between the two feeder circuits so that a power failure on any bus section affects only half the lights on any floor of the factory. The lighting in shipping and storage areas is staggered as much as possible, but it is not practical to do as complete a job in these buildings. The lighting arrangement is far superior to the old plan where one transformer supplied an entire six-story factory building. Safety and continuity of production are greatly aided by the new lighting

Make-up Pay Reduced 43%
AT MAGNET MILLS
BEFORE O.V.S. PROGRAM
MAKE-UP PAY
AFTER O.V.S. PROGRAM
MAKE-UP PAY 43% LESS
Writes G. Luther Weibel,* Personnel Director, Magnet Mills, Inc., Clinton, Tenn.: "In our industry training costs are high, and training periods quite long. In our seaming department we find it takes approximately nine months before a specific satisfactory production standard is obtained. Prior to adoption of our vision program, it took 43% more make-up pay to train a seamer than it does today. At the same time, under our vision program, seamer learners at the end of nine months produce 22% more work."
*Reprint of Mr. Weibel's complete article available on request.
BAUSCH & LOMB
OCCUPATIONAL
VISION SERVICE
Case History

A PROVED METHOD
To help your plant make money 9 Ways!

It's a matter of record that 4 of every ten industrial workers are visually unqualified for satisfactory performance on their jobs (established by the records of millions of visual performance tests of industrial workers in more than 4,000 different job categories). When visual skills are correlated to job requirements, working efficiency is notably increased. The Bausch & Lomb Occupational Vision Service is a scientific method for meeting this problem of "Eyes for the Job." *Employee participation is voluntary... and workers like the program.* Benefits which accrue in plants using O.V.S. (benefits which can accrue in *your plant,* too) include:

1. **Improved quality of production**
2. **Increased production per worker**
3. **Reduced waste of materials and work rejects**
4. **Improved accident record**
5. **Reduced labor turnover**
6. **Lowered training cost**
7. **More effective placement**
8. **Reduced absenteeism**
9. **Improved employee relations**

MAIL TODAY!

Send for the brochure "Eyes Right for the Job," which tells what the Bausch & Lomb Occupational Vision Service is, how easily it can be administered in your plant, and at what low cost.

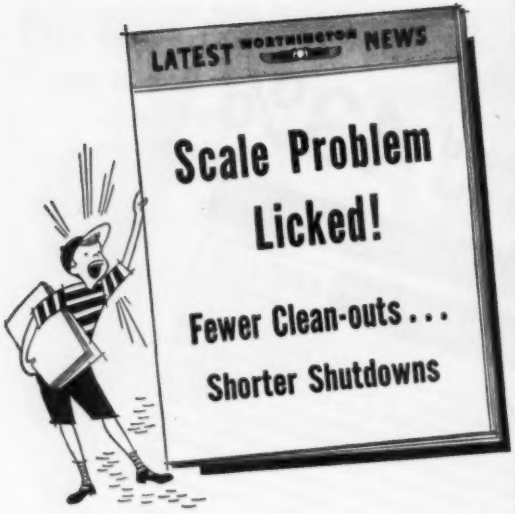
BAUSCH & LOMB OPTICAL CO.
632-9 St. Paul St., Rochester 2, N. Y.

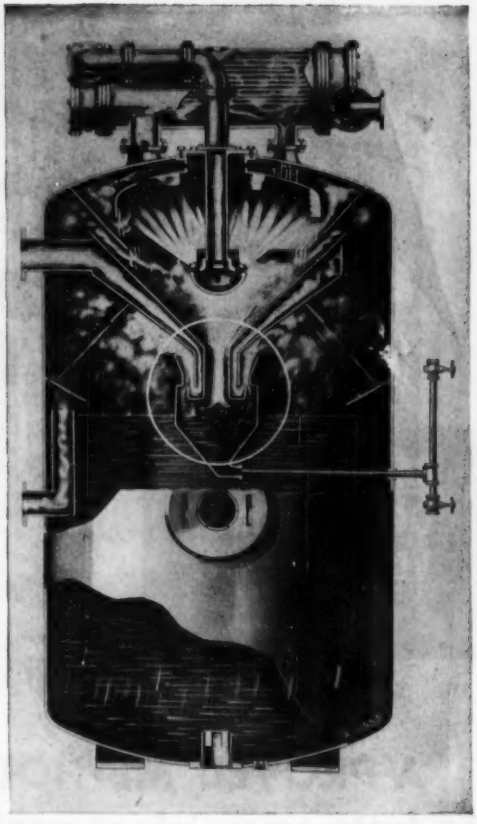
Please send me the brochure "Eyes Right for the Job," and complete details on the Bausch & Lomb Occupational Vision Service.

Name ..... Title .....

Company .....

Street ..... City ..... Zone ..... State .....





Hard scale, formed on the trays of deaerating evaporator preheaters, is no longer the big problem it used to be.

In a large central station (name on request), the preheaters had to be cleaned every three weeks, and the units were completely shut down at that time from eight to ten hours.

Then Worthington steam-jet deaerators were installed—with a "blowdown" head designed by Worthington engineers. This special head allows the operator to remove harmful deposits at regular intervals *while the unit continues in service*. It also provides for simple and speedy acid cleaning of critical parts, when necessary, without even opening an access door or removing any parts from the unit.

Compare The "Time-Outs"

The Worthington unit, given a short blowdown once each shift, stays in continuous operation with maximum deaeration for periods of at least 8 months. When the acid treatment is given at the end of that period, the job is finished in under three hours.

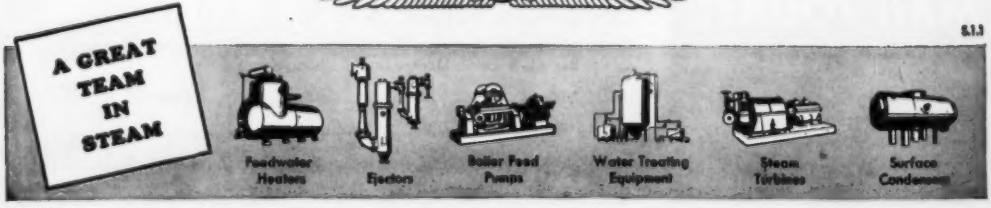
Compare this with the former record. *Then*—8 to 10 hours outage every three weeks and labor by a *crew* of men. Now—with Worthington's blowdown head—operation uninterrupted during regular short blowdown, with a shutdown for acid cleaning only once in almost a year, requiring only one man and three hours!

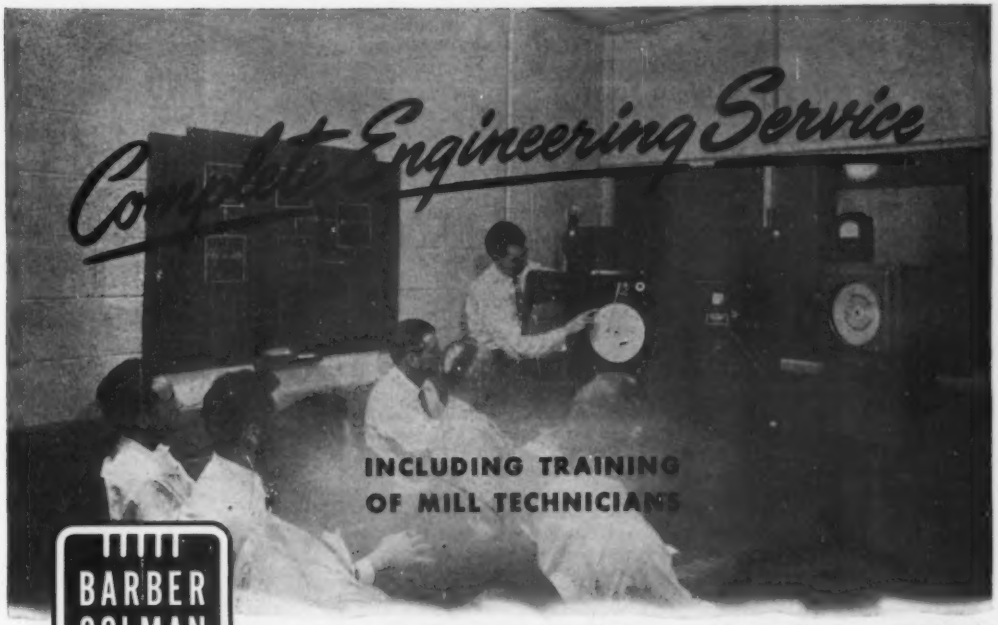
Worthington Makes Deaerating Equipment News

Developments like this, applicable to any deaerators operating under conditions of scaling, are typical of Worthington's engineering firsts in water treating and deaerating equipment.

Worthington manufactures all of the equipment needed in a complete water treating installation. For further information on why *there's more worth in Worthington*, address Worthington Pump and Machinery Corporation, Steam Power Div., Harrison, N. J.

WORTHINGTON



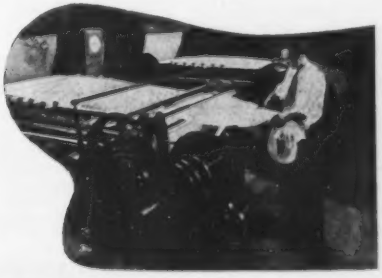


BARBER COLMAN

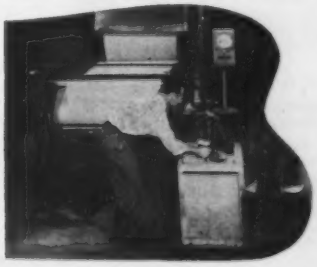
MOISTURE CONTENT and Complete Slasher Room CONTROLS

Barber-Colman engineers, who have gained a thorough knowledge of requirements through years of experience, will, at your request and without obligation, make a survey of the control requirements of your slasher room. On delivery of Barber-Colman equipment, factory trained engineers *always* supervise the installation and accurately calibrate the controllers. In addition, training courses for mill technicians are offered at Barber-Colman branch offices to impart a practical working knowledge of the equipment and thus assure its continued efficient operation. Your Barber-Colman representative will show you how to obtain lower costs, greater production, and better products with Barber-Colman Moisture Content and other Complete Slasher Room Controls.

The Barber-Colman *Electronic* Moisture Content Controller with pedestal mount.



Barber-Colman installation supervisor takes a sample of warp from the slasher.



Using a portable oven and scales, a Barber-Colman installation supervisor makes a moisture content determination for calibration purposes.

BARBER COLMAN

BARBER-COLMAN COMPANY, Rockford, Illinois

Boston, Mass. • Greenville, S. C. • Atlanta, Ga. • Greensboro, N. C.

Now Extract LARGE LOADS Faster!

Tolhurst's new 72" Center-Slung Extractor incorporates an entirely new method of stabilization, which enables it to handle greater out-of-balance loads in double-quick time. Less care is required in loading; fewer redistributing stops are necessary. Triangular bed plate permits anchoring to the floor.

2 TYPES AVAILABLE

Can be equipped with manual or fully automatic controls. Cover is safety type. Machine can be stainless steel, monel or rubber lined. To extract LARGE LOADS *faster* . . . investigate today!

New 72" TOLHURST Center-Slung* EXTRACTORS

*TM Reg.

Send Today For Free Catalog

TOLHURST CENTRIFUGALS DIVISION
AMERICAN MACHINE AND METALS, INC.
Dept. TW951
EAST MOLINE, ILLINOIS

WITHOUT OBLIGATION, send Tolhurst catalog on Center-slung and other extractors especially designed for the textile industry.

Firm Name_____

Street Address _____

City & Zone_____ Sate _____

Sender's Name_____

system. Light flicker, attributable to motor starting, is also considerably reduced.

Old Capacitors Plus a Few New Ones Are Used

The old system was provided with capacitors for power-factor improvement. Banks of capacitors were located on the heavier feeders near important loads and switch on and off manually as the load varies with production schedules. In this manner, more satisfactory voltage was obtained and the average power factor of the plant was maintained between 90 and 95%.

The plan is to use all existing capacitor banks and to add a few more to compensate for the recent increase in connected load. Each substation bus section is provided with one feeder breaker for connecting capacitors to the bus.

All the capacitors are located in the substation enclosures for convenience and safety. Several manually-operated breakers of questionable interrupting capacity formerly used to switch capacitors are thus eliminated. With the shorter distribution cables from the new load-center substations, it is not necessary to have capacitors at the end of the cables for voltage improvement.

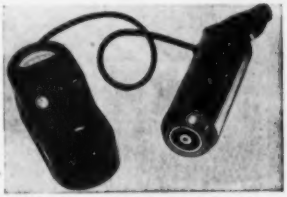
Lighting Is One-Fifth Of Total Load

About 20% of the total plant load is lighting. The remainder consists mainly of small induction motors, many operating at light loads. There are only two synchronous motors in the plant; these drive air compressors. Consequently, the plant power factor would be about 75% without capacitors.

Improvement of the power factor to 95% represents a considerable saving in the cost of power since the demand charge is based on kva. rather than kilowatt demand.

When the power-system survey was started, the peak demand was about 3,500 kw. At present the peak load is 4,800 kw. However, this rapid rate of increase is not expected to continue during the immediate future, for several process changes were made simultaneously with installation of the new power system. The installed capacity of substations should be ample for several years. But, if unforeseen increases in load do occur, new load-center substations can be placed to serve a new load without disrupting or overloading present equipment. This flexibility is only one of the numerous advantages of the load-center principle.

two great models for TESTING MOISTURE CONTENT in wool, cotton, rayon and nylon



MODEL PD-1 for textiles in loose or compressible forms—3" penetration.

MODEL K-2 for textiles in cones, rolls, beams and similar forms.

10-DAY FREE TRIAL!

Try one of these moisture testing instruments for 10 days—use it, test it and prove its superiority. Send samples, moisture range and Purchase Order to cover trial period. No obligation!

Quick, Accurate Readings

In less than 3 seconds you can test moisture content of practically all types of textile materials, including cotton, wool, rayon and nylon in fabrics, packages and loose forms.

This portable instrument is designed for "on the spot" checks in your plant. Moisture Register is easy to operate—requires no technical knowledge or complicated figuring. Cost is negligible in comparison to advantages. Write today for complete details. Specify type of material to be tested.

MOISTURE REGISTER CO.
Dept. G
1510 W. Chestnut St. Alhambra, Calif.

ELECTRONIC MOISTURE REGISTER
Mfd. by Moisture Register Co. 1510 West Chestnut St. Alhambra, California

TEXTILE BANKING COMPANY

Inc.

Factoring Service

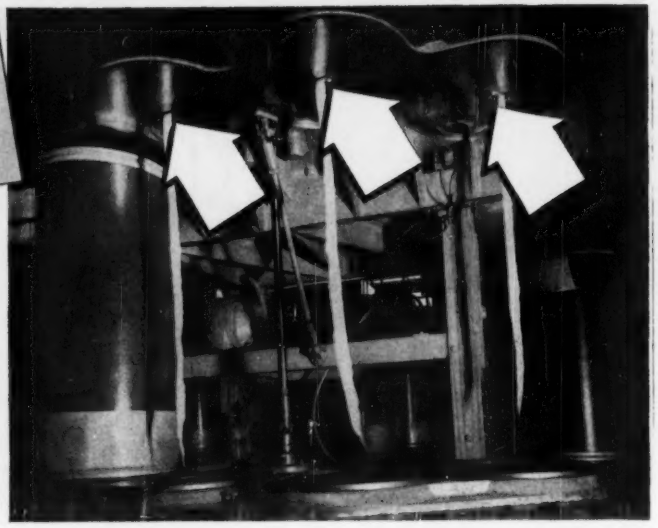
Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

No more static trouble

IN DRAFTING NYLON!

Another example of how textile static problems are being solved with Ionotron Static Eliminators®



Ionotron Static Eliminators are mounted beneath the coiler heads on this pin drafting machine. In this view, three drums have been removed to show how static-free nylon fibers come from coiler heads and drop into revolving drums.

"In the winter it is almost impossible to operate machines efficiently, due to heavy static charges caused by cold dry air. This is noticeable especially in nylon. With Ionotron Static Eliminator discs, this problem is easily overcome, and machines run freely and flawlessly." That's the report of Frank Zabroski, Foreman of the Drafting Department, Nathan Schwartz & Sons, Philadelphia, Pa.

BEFORE IONOTRONS were installed heavy static electricity charges were built up in the nylon. As the nylon tow came out of the coiler head to drop into the revolving drum, it clung to the top of the drum. The nylon added up inside the top of the drum until the pile became so heavy that it fell to the bottom, creating a tangled mass. Because the nylon is fed from these drums into finishing machines, it is important that the tow wind and fall into the drums in an orderly fashion. But static was fouling-up the operation and the machines required constant watching.

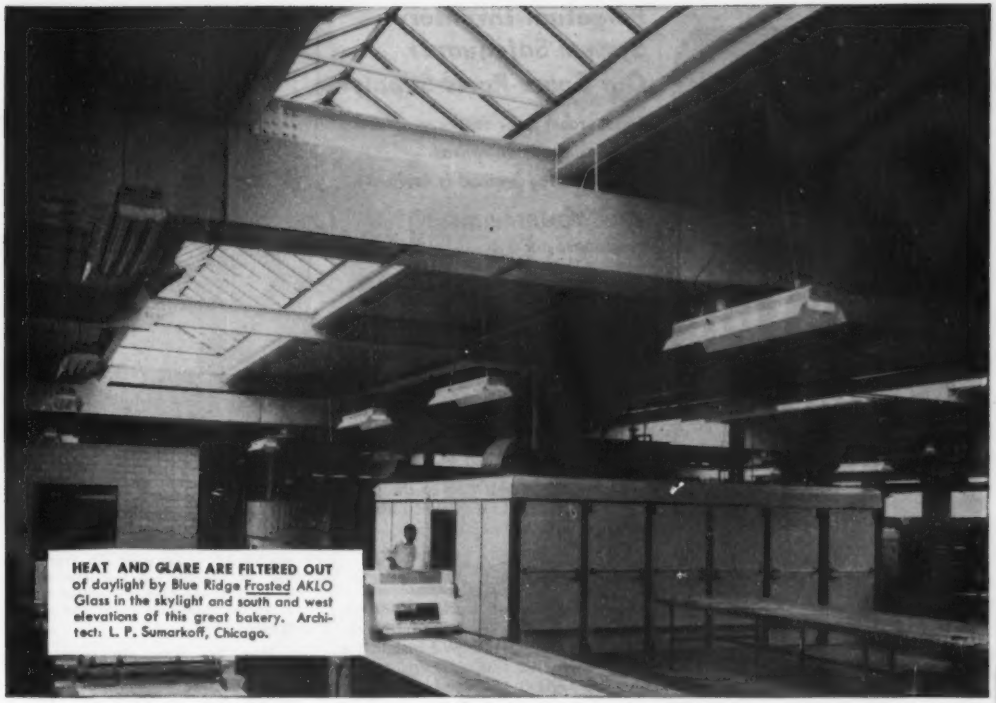
AFTER IONOTRONS were installed by the company on its seven pin drafting machines, static charges — and nylon tangling — were eliminated. The 20 disc-type Ionotrons permit filled drums to move on to the finishing department with the nylon coiled uniformly. Static-free, it feeds easily and smoothly into the finishing machines. Machines run steadily and need only normal attention.

HOW IONOTRONS WORK—
Ionotron Static Eliminators—a unique application of atomic energy—contain a self-activating source of continuous alpha radiation. This ionizes the air in the static trouble zone. The ionized air conducts the static harmlessly to ground. The static-removing effect of Ionotrons is continuous and permanent. They can be produced in many shapes to fit various types of textile equipment. There are no moving parts, no power requirement, and no operating cost! The only maintenance required is an occasional wipe with a soft cloth.

WANT MORE INFORMATION? Along with complete information on the Ionotron, U. S. Radium has a simple questionnaire form ready to send you. Filled out and returned, it very likely will permit us to tell whether your static problems can be solved with Ionotrons. If your application is for wool and worsted machines, write Davis & Furber Machine Co., North Andover, Mass. For any other textile application write Dept. T-9, U. S. Radium Corporation, 535 Pearl Street, New York 7 N. Y.

IONOTRON Static ELIMINATOR

UNITED STATES RADIUM CORPORATION, 535 Pearl Street, New York 7, N. Y.



HEAT AND GLARE ARE FILTERED OUT of daylight by Blue Ridge Frosted AKLO Glass in the skylight and south and west elevations of this great bakery. Architect: L. P. Sumarkoff, Chicago.

Reduce eyestrain...boost efficiency, with

FILTERED DAYLIGHT

This skylight wears "sunglasses" of Frosted *Aklo** Wire Glass.

It diffuses incoming sunlight, so there are no blinding bright spots on shiny equipment. Seeing is easier—less tiring.

Blue-green *Aklo* Glass not only looks cooler—it actually keeps rooms cooler because it's heat absorbing glass. Frosted *Aklo* ¼" Glass shuts out as much as 44% of the sun's heat.

Less glare, less heat. This is eye comfort and body comfort which workers naturally convert into greater production efficiency and safety. An extra dividend—there's less load on air-conditioning equipment.

When you're out driving, notice how many new plants are glazed with blue-green heat absorbing glass on south, east and west elevations. They were wisely planned for better seeing, better production.

See for yourself how Frosted *Aklo* Glass reduces glare and sun heat. Ask your Libbey-Owens-Ford Glass Distributor for a Radiometer demonstration of its effectiveness. Or mail the coupon.

BLUE RIDGE
***AKLO* GLASS**

FREE BOOK on Reduction of Sun Glare and Heat

Blue Ridge Sales Div., Libbey-Owens-Ford Glass Co.
B-1891 Nicholas Building, Toledo 3, Ohio

☐ Please send me your book "Filtered Daylight".
☐ I would like to see a Radiometer demonstration.

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Company _____
Address _____
City _____ State _____

 For more information, write direct or use Reader Service post card.

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Valuable experience — much needed "know-how" — years of research—all at your disposal because of 25 years of package dyeing.

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Dyers and Converters of Synthetic Yarns for All Industries

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NEW YORK REPRESENTATIVE

Empire State Bldg.

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★

Perpetual-Inventory System Safeguards Our Spare-Parts Supply

Supply-room labor costs are reduced.
Purchasing is centralized.
Stock-keeping method is foolproof.

By S. FUNDERBURK

Purchasing Agent
Gastonia Combed Yarn Corp

SPARE-PARTS PURCHASING should normally tie up as little capital as possible in parts, and yet maintain adequate supplies of material and parts needed. At the Gastonia Combed Yarn Corp., we depend upon a perpetual-inventory system for assurance of an adequate supply with minimum capital involved. Our system was designed to serve our particular needs after careful examinatoin of the problem with the aid of a qualified firm of management engineers.

How We Started

Our first point of attack was our system of controlling stock and purchases of maintenance parts. We installed a Remington Rand Kardex perpetual-inventory system that has helped us to correct a wasteful stock and purchase policy. Previously, individual department heads did some of their own buying. Two troubles grew out of this policy:

1. Frequent unnecessary and wasteful duplication of parts with no control over possible pilferage.
2. The problem of machinery going out of order while awaiting parts that the purchasing and stock-keeping program had allowed to sink below a minimum-requirements level.

We passed up valuable savings because our mills were permitted to buy from many sources. Besides, we could not get the service that selective buying brings.

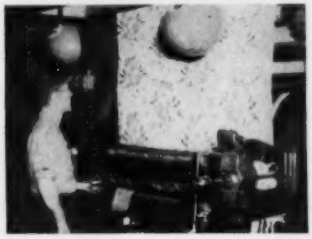
To understand better the need for efficient purchasing and stockkeeping control, a brief indication of how we operate might be helpful. We provide a special service in the textile industry as a whole. We employ about 2,000 skilled and unskilled people, in several plants, to card and comb cotton and to spin, twist, and wind cotton yarns. In performing these tasks we must necessarily maintain an efficient inventory of both maintenance parts and materials that do not go into the finished products but are necessary to maintain production.

Stock Room Methods

We have a centrally located stock

Thank you, Mr. Kluthe

(of Manhatton Print Works)



Mr. J. Kluthe, Manager of Manhattan Print Works, has written an important article in August "Textile World" ("our print-roll brushes are 18 months old — and still going") in which he tells about furnisher brushes—old types and new types.

Here are some statements in this article that refer to the furnisher brushes he now uses, after careful tests in production. This brush that he refers to is an

INDUSTRIAL METAL-CORE, NYLON-BRISTLE BRUSH.

Says Mr. Kluthe:

"It combines the advantages of light weight, strength, and a firm bristle surface that presses evenly from end to end of the brush."

". . . . . there is no tendency for unsupported bristle ends to bend or snap off."

". . . . . this new type of furnisher brush is more easily cleaned after use."

". . . . . our furnisher brushes now last indefinitely."

•

We'll gladly send you the full text of this article on furnisher brushes.

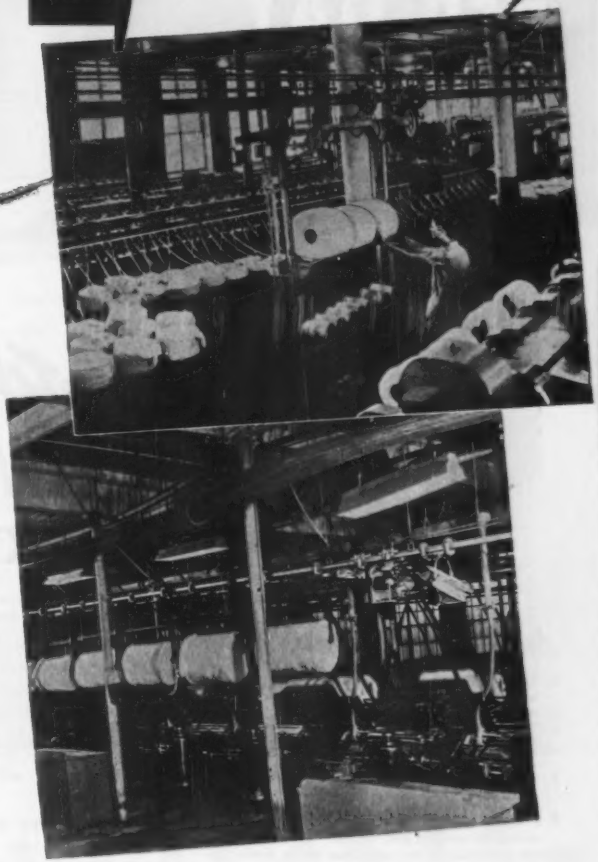
INDUSTRIAL BRUSH CO.
Woodside Ave.,
LITTLE FALLS, NEW JERSEY

INCREASE PRODUCTION NOW...

WITH

Present Plant Manpower

Present Plant Space



The next time you walk through your plant, cast your eyes toward the ceiling and you'll realize that there is mighty valuable space that can be put to work—without increasing your plant capacities and without increasing plant manpower.

An American MonoRail engineer will show you how you can use your "air rights". With thousands of overhead handling installations from which to draw, each with many money and time saving advantages, it will pay you to investigate American MonoRail Overhead Handling Systems. Send for bulletin C-1.

THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE **CLEVELAND 7, OHIO**

EXTRACT MORE LOADS PER DAY with the

Fletcher "TWINTAINER" EXTRACTOR

The twin semi-circular container-trucks are loaded and unloaded away from the extractor so the extractor can be "kept on the go." With the use of one or more extra sets of container-trucks, one may be loaded or unloaded while the other is spinning. This makes it possible for one man with two "Twintainers" actually to handle as much work as three men with six 48" regular extractors.

The bottom-opening gravity discharge is not only faster, but is easier on the contents, eliminating any pulling or tearing. It will pay you to investigate the Fletcher "Twintainer".

Two sizes are available . . . 50" and 54". Both with speed of 750 rpm.

Full details are in our Bulletin 74 . . . write for a copy.

Look at these Features:

1. Twin Container-Trucks, stainless steel, with bottom unloading.
2. Automatic Air Brake and Timer.
3. "Finger Tip" Control on separate stand—no push, no pull, no stoop, no strain.
4. "Long Swing" Self-Balancing, with Adjustable Springs.
5. Stainless Steel Curb, heavy gauge and polished.
6. Stainless Steel Safety Cover, with air-operated automatic opening and closing.
7. Close-coupled Motor—less floor space, easier balancing.

FLETCHER WORKS

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YOU CAN'T LOSE!

Sylvania guarantees your money back...

if you don't agree Sylvania Fluorescent Tubes are the finest you've ever used!

ACCEPT SYLVANIA'S "NO-RISK" OFFER...
THE GREATEST IN LIGHTING HISTORY!
Try 24 Sylvania Fluorescent Tubes of any popular type. If they don't give more light and maintain color and brightness for a longer time than any other brand, send them back with the signed Certificate of Assurance and your money will be refunded!
Superior Sylvania Quality
makes offer possible!
Sylvania's progressive research and precision manufacturing control the important elements of fluorescent tubes, namely . . .
1 COIL COATINGS containing Zirconium extended the active life of the coils and was a major factor in enabling Sylvania to triple the rated life of fluorescent tubes.
2 FLUORESCENT POWDERS, newly improved and rigidly controlled as to thickness and uniformity on glass of each tube, mean better, more even light for a longer time.

For outstanding electrical work of any kind, call the Electrical Contractor who displays this emblem

QUALIFIED LIGHTING CONTRACTOR AUTHORIZED SYLVANIA SALES SERVICE

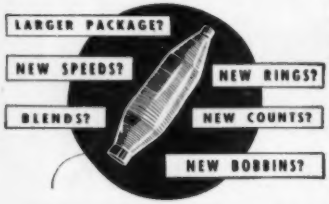
SYLVANIA

Sylvania Electric Products Inc., 1740 Broadway, New York 19, N. Y.

FLUORESCENT TUBES, FIXTURES, SIGN TUBING, WIRING DEVICES; LIGHT BULBS; RADIO TUBES; TELEVISION PICTURE TUBES; ELECTRONIC PRODUCTS; ELECTRONIC TEST EQUIPMENT; PHOTOLAMPS; TELEVISION SETS

U. S. RING TRAVELERS

What YARN changes are you making?



What TRAVELER changes will they require?

Wherever you feel a change in travelers would benefit, let U. S. men make suggestions and furnish test samples.

Prompt shipments from stock at Greenville, Providence

"A Style and Size for Every Textile Fibre!"

U. S. RING TRAVELER CO.

HOME OFFICE & FACTORY PROVIDENCE, R. I.

Write, wire or phone nearest office.

W. P. Vaughan, W. H. Rose
Greenville, S. C.—Box 1048—Phone 3-0915

O. B. Land
Athens, Ga.—Box—1187—Phone 478

L. H. Mellor, Jr.
Mid-Atlantic States, 123 Treaty Rd.
Drexel Hill, Pa.—Phone Hilltop 6-1563

H. R. Fisher
Concord, N. C.—Box 83—Phone 8366

H. J. Smith
Providence—Box 1187—Gaspee 1-0100

room. Here we keep all general mill supplies, machinery parts, and machine-shop supplies. Shelves are provided for the general mill supplies, bins for the machinery parts, and special tool cribs for machine-shop tools. Where special types of maintenance supplies are used, we have installed special racks.

With the perpetual-inventory system, the stock room is efficiently operated by one full-time employee, with the occasional assistance of another clerk. This benefit alone has reduced our labor and time costs considerably. Kardex enables our supply clerk to handle: requisitioning, receiving and checking, storing, issuing, record-keeping, maintenance of the supply room, and maintenance of the perpetual inventory.

All stock-keeping duties are important, but that of maintaining a perpetual inventory is of greatest importance. Failure on the part of the stock room to provide parts when required could result in a machine down or even an entire department closing down until the part or parts arrived. Therefore, we have placed special emphasis on our Kardex system and the protection it gives us.

Within a Kardex pocket is kept a stock-record card, purchase-record form, and title insert for one item. Notations and entries in these records are dependent upon our supply requisition form, which is passed to our stock clerk by the mills and departments requiring parts and supplies.

The purchase record form provides us with a permanent, up-to-date history of the four main phases of purchasing avtivity on each item. Space is provided on this form for a description of the item and a note of its location in the stock-room bins. A list of the vendors who supply the item, with a number code to indicate from which vendor the item has been ordered, is also included. The form also reports minimum stock permitted and the predetermined quantity to reorder.

The title insert, which occupies the lower Kardex pocket with the stock-record card, is equipped with a signal tab that shows when an item has reached minimum stock requirements. A vertical signal indicates the status of a reorder of the item. Only a brief study of a Kardex tray is needed to learn what is in stock, what the trends in use and wear are, and how much capital is tied up in inventory. Our $30,000 inventory turns over at the rate of nine times a year—an annual disbursement of about a quarter of a million dollars of capital funds. We feel our system is invaluable as a safeguard over this phase of our financial and production policies.

SHELL ROLLS
BLEACHING ROLLS
CLOTH ROLLS
WHIP ROLLS
HIGH SPEED WARPER BEAMS
LOOM BEAMS
TEMPLE ROLLS
WOOD TOP ROLLS

TOP WORKMANSHIP
TOP QUALITY
TOP DELIVERY

WILLIAM McGASKIE, Inc.
Wooden Textile Specialties
Forge Road Westport, Mass.

Complete
FACTORING
SERVICE

FACTORING DIVISION

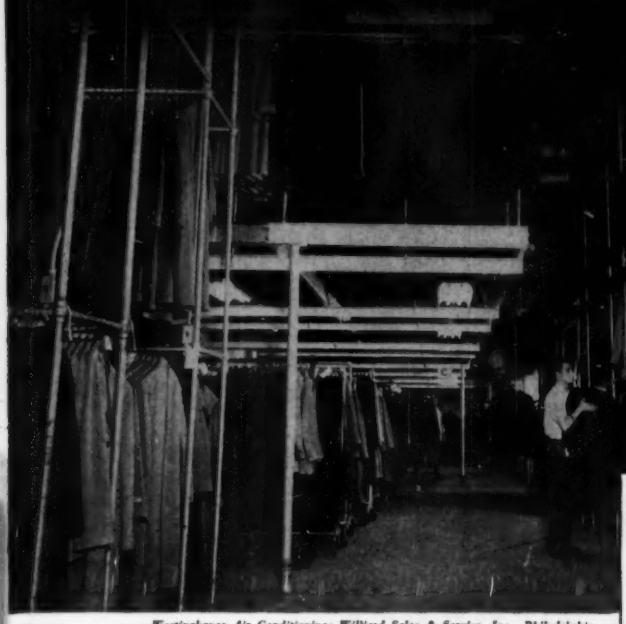
TRUST COMPANY OF GEORGIA

ATLANTA

Next door to every MILL in the SOUTH

Member Federal Deposit Insurance Corporation

PUTTING *Air* TO WORK FOR BOTANY BRAND 500



Westinghouse Air Conditioning: Willard Sales & Service, Inc., Philadelphia
Consulting Engineer: Cronheim & Weger, Philadelphia

TAILORED AIR

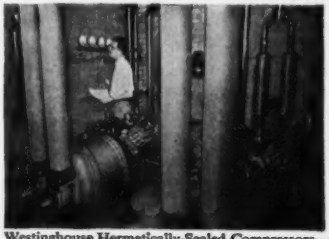
SMOOTHES THE WRINKLES OUT OF SUIT SALES

Dampness from final pressing stays in coats and suits like water in a sponge. Ten-to-one, a suit shipped damp will arrive looking as wrinkled as last week's wash. But 20,000 "Botany Brand 500" men's garments, tailored each week by H. Daroff & Sons, go out in good shape—will be crisp and sales-room fresh when they arrive.

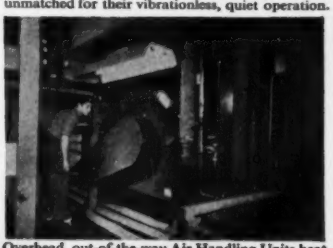
Westinghouse Air Conditioning does the trick by *putting air to work* in this 90,000 garment storage room. Air is kept at 76° and 45% humidity to pull dampness out of suits in six hours—keep them in press and ready to ship any time. And dirt, dust and grime are locked out behind closed doors and windows throughout the year.

Westinghouse equipment can *put air to work* for you, too—with air conditioning, air cleaning or air handling. Call the Westinghouse Air Conditioning Distributor listed in the Yellow Pages, or write Westinghouse Electric Corp., Air Conditioning Division, Hyde Park, Boston 36, Mass.

Westinghouse Type EVA Evaporative Condensers provide savings up to 95% in water consumption.



Westinghouse Hermetically-Sealed Compressors—unmatched for their vibrationless, quiet operation.

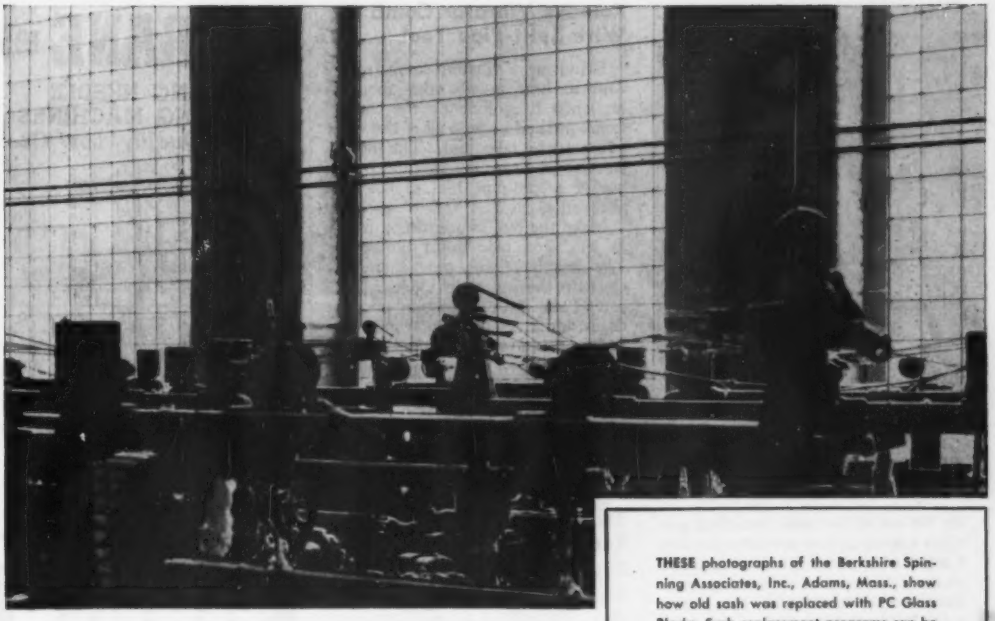


Overhead, out-of-the-way Air Handling Units heat and cool Daroff executive and accounting offices.

YOU CAN BE SURE...IF IT'S

Westinghouse

J-80232



THESE photographs of the Berkshire Spinning Associates, Inc., Adams, Mass., show how old sash was replaced with PC Glass Blocks. Sash replacement programs can be completed at one time, or they may be spread over a required period, thus adapting them to budget demands.

SASH REPLACEMENT WITH PC GLASS BLOCKS

- increases production
- reduces operating costs

PC GLASS BLOCKS give more than twice the insulating value of ordinary single-glazed windows. They thus help to control temperature and humidity, reduce condensation, lower heating and air-conditioning costs. PC Glass Blocks seldom require repairs or replacements. No periodic painting, puttying and caulking are necessary. They admit abundant daylighting over wide working areas, stop the infiltration of harmful dust and grit. And PC Glass Blocks do not utilize critical defense materials, so they are immediately available.

Why not review your sash replacement needs now? Our specialists will be glad to cooperate with you, without any obligation on your part. For further information on PC Glass Blocks, fill in and return the convenient coupon.

PC Glass Blocks are immediately available . . . no construction delays!

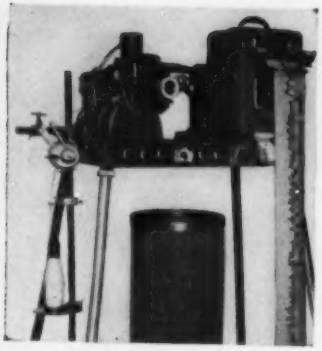
PITTSBURGH CORNING CORPORATION
PITTSBURGH 22, PA.

PITTSBURGH ® PC CORNING GLASS BLOCKS
The mark of a modern building

Pittsburgh Corning Corporation
Dept. W-91, 307 Fourth Avenue
Pittsburgh 22, Pa.
Without obligation on my part, please send me a FREE copy of your booklet, "The Mark of a Modern Building—PC Glass Blocks."

Name.....
Address.....
City.....State.....

Distributed by Pittsburgh Plate Glass Company; W. P. Fuller & Co. on the Pacific Coast; Hobbs Glass Ltd. in Canada; and by leading distributors of building materials everywhere.



The

PACIFIC EVENNESS TESTER

By the use of electronic recording provides a much greater magnification and a much finer gauge for the evaluation of the uniformity of sliver or yarn in the worsted, woolen, jute, felt, cotton, rayon or blended textile manufacturing field.

To our knowledge, the Pacific Mills' method of analysis is the only known means of obtaining a true and positive record of sliver and yarn uniformity based on an absolute thickness measurement. The results obtained by the use of the PACIFIC EVENNESS TESTER are unaffected by moisture, oil, finish, twist, beard, color, shape of cross-section and atmospheric conditions.

Material after testing has the identical physical characteristics of the same material prior to testing. A given unit length can be re-tested any number of times with exact duplication of recording and without waste.

- 7 stages of magnification
- 2 chart speeds—one yard per minute and one yard per hour
- weights or counts can be determined from the chart

The simplicity of the PACIFIC EVENNESS TESTER readily permits its use either in the laboratory or any place in the production area.

SEND SAMPLES FOR TESTING

WRITE FOR PAMPHLET TO

ANDERSON MACHINE SHOP, INC.

BROOK ROAD

NEEDHAM HEIGHTS 94, MASS.

Remove Vibrator Comb With Split-Pipe Tool

Removing a vibrator comb from a Knowles head usually takes about 2½ hr. when it is done by the conventional method because all of the vibrators must be taken out. The job can be done in a very few minutes by the use of a split-pipe tool to hold the chain in place.

Make the tool by splitting a length of 1-in. iron pipe down the center. The length of the pipe should be equal to the roll width on the chain bar. Place the pipe section over the chain and turn the handwheel until the chain and pipe are under the vibrators and runs. The vibrator comb can then be slipped out and replaced quickly.

Remove the pipe tool by turning back the handwheel. Make necessary adjustments before the loom is started.

Traps in Opener Line Remove Foreign Matter

Our mill is equipped with magnetic tramp-iron traps in the opener feeder lines. These traps are effective in removing iron and steel particles from the cotton and waste put into the feeders.

However, we find that there are many kinds of foreign material of nonmetallic nature that these magnetic traps will not remove. While this type of foreign matter is less likely to cause fires than iron and steel scrap, it can and often does cause damage to machine parts.

The best insurance against fires and machinery damage is to install gravity traps in the feed lines in addition to the magnetic traps. These gravity traps are simple in design and easy to construct and install. They will not cause trouble in the passage of stock through the machines.

The location and construction of these gravity traps will, of course, vary with different opening-room layouts. The most important objective should be to take out all foreign matter as soon as possible to prevent damage.

One of the simplest and most effective applications is at the end of the feed table where the cotton enters the conveyor pipe to the vertical opener. One trap of this type in actual operation removed bale buckles, spinners' brass hooks, wood with inserted nails, broken glass, and other material.

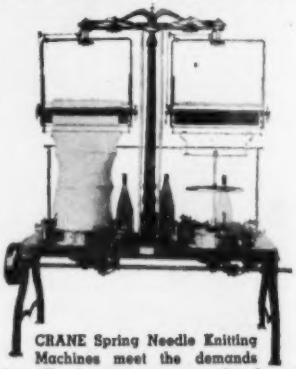
The only change made in the original installation was to shorten the nose of the vertical-opener intake pipe. We left a 2-in. gap between the feeder-apron pulley and the intake pipe.

In some cases, it may be advisable to increase or decrease this distance,

1870 CRANE 1951

SPRING NEEDLE KNITTING MACHINES

Speed - Quality - Low Cost



CRANE Spring Needle Knitting Machines meet the demands of rapidly changing patterns and styles on all weights of fabrics.

CRANE

MANUFACTURING CO.

LAKEPORT, N. H.

FOR STATIC ELIMINATION

The Simco "Midget" is safe, efficient, inexpensive!

the SIMCO company

9th and Master Streets

Philadelphia 22, Penna.

-it's the "Conical Ride" that does it!

The bobsled takes the turn in safety because of the shape of the track—just as the TRAVELER on the Herr Conical Ring rides in the right position for best results!

At left, you see the ring traveler at TOP SPEED. It rides on the TOP and SIDE face of the ring. The heel is free to COMPENSATE for yarn variations.

HERR

"FREE-HEELING"

CONICAL RINGS

Only Herr gives you this special design of ring and so only with Herr Conical Rings do you get a traveler with sufficient "play" in the free heel to reduce yarn breakage, give smoother yarn, more uniform bobbins — in short, more yarn production at less cost. These are what today's defense program demands—so demand now that a HERR representative show you how to get them.

Herr Conical Rings give you an added feature — a better control of lubrication that saves oil, keeps yarn cleaner, makes travelers last longer and scraps rewicking. It's HERR every way, for more and better yarn every day.

Only HERR gives you the CONICAL RING

HERR *Manufacturing Co.*

INCORPORATED

318-320 FRANKLIN ST. BUFFALO 2, N. Y.

 For more information, write direct or use Reader Service post card.

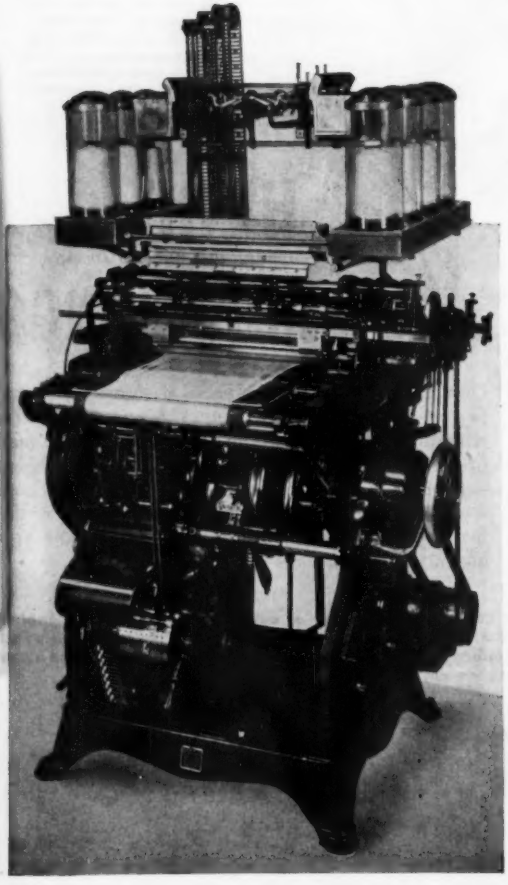
X FACTORS

IN THE

Superior Operation

OF THIS

WILDMAN HOSIERY MACHINE



Single Head Single Unit Full Fashioned Hosiery Machine

Plus factors in unusual accomplishments are the "something special" offered. . . . Here are the "special" features in this machine —

— Produces stockings a few hours after it reaches your floor . . . Each machine adjusted within itself . . . No maladjustment because of temperature changes . . . No special floor and building construction required . . . Machine readily moved from location without dismantling.

WILDMAN MFG. CO. NORRISTOWN, PA.

What does comfort mean to a machine?

Just what it means to you and me. Because like you and me, machines don't like to run hot and cold. They like uniform temperatures.

Just like your fibers need uniform humidity. But an evap cooling system can't hope to control temperatures. And shifting temperatures knock machines out of adjustment.

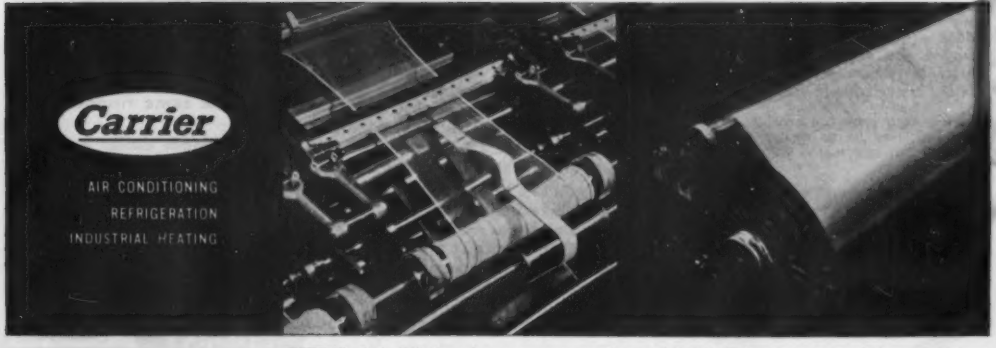
You know how metal expands when it gets hot. So as temperatures mount . . . so do your troubles. But they needn't. All you've got to do is control your temperature. And all that takes is chilled water running into your air washer.

Then your machines are always comfortable. You don't waste labor and productive hours trying to keep them in adjustment.

Synthetic yarns are easier to handle. Knit better. Weave better.

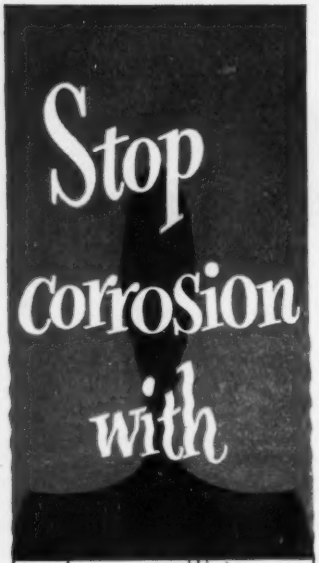
And employees feel better, do a better job.

Whatever your present system is, we can add refrigeration to it. Ask your Carrier representative to tell you about it. Carrier Corporation, Syracuse 1, N. Y.



KNITTING Controlled atmosphere assures more uniform lengths of hosiery and more firsts with less mending and less adjusting of machines.

WEAVING Higher weave room efficiency comes from uniform temperature and humidity. Fewer seconds, much less fixing and more looms tended per weaver.



Hysol
4000
Coatings

Wherever chemicals, caustic atmospheres, salt or fresh water cause corrosion . . . Hysol Coatings can save money for you. These tough chemical and abrasion-resistant films adhere strongly to all metal surfaces. They can be applied by brush, spray, dip or roller methods with your own personnel—or when practicable we are equipped to apply the coating in our plant. Although they dry quickly in air, forced drying under moderate temperature is recommended for applications which are particularly corrosive. The finished coating is available in eight colors.

Describe your corrosion problem on your letterhead, and let us show how Hysol Coatings can save money for you.

houghton laboratories, inc.
OLEAN, NEW YORK

Plants at Olean, N. Y. and Smethport, Pa.

depending on the speed of the feed-table pulley and the strength of intake draft at the mouth of the pipe. An increased distance permits larger articles to drop out, but too great a distance will interfere with the pipe draft. This gap allows heavier foreign matter to drop into the box while the lighter cotton is drawn into the conveyor pipe.

Many other effective places can be found to put these traps. In modern conveyor-pipe installations, recognition is given to the value of gravity in the removal of heavy foreign matter. Most installations now are designed to draw stock up into vertical pipes from the ends of feed tables. Only the lighter cotton is drawn up; heavier material remains on the apron and is carried off the end of the feed table.

Moisture Controller

(Continued from page 151)

Other quality advantages are: a notably more uniform finish; parchmentizing of synthetics is prevented; a softer, more mellow hand is secured, especially on spun rayon and waffle cloths. The 5% moisture in the goods causes print cloths to take the color better and more uniformly, and there is no migration of color. The correct moisture content improved the finish.

Also we can finish more closely to the grey goods without risk of damage to the cloth.

Workers Like It, Too

The use of the Drimeter on all of our regularly operating frames appeals to the department heads and the workers alike.

The head of our dry room feels that the great advantage to him is that by knowing, instead of guessing, the moisture content of goods coming off the tenters, he can eliminate one of the variables that can affect the final product. The Drimeter also helps to assure uniformity of finish of our type of goods from order to order.

The operators' attitude has been most enthusiastic. When they realized that the use of the Drimeter enabled them to do a better job they were all for it. Naturally they were somewhat skeptical at first, but when they saw the facts and figures and the results of the tests, they were "sold." The heavy responsibility of assuring correct drying is taken from the shoulders of the worker and put on the Drimeter.

Summing up: the effect of this moisture-control equipment has been to increase production 20%, to save us money in steam current and time.

42
STOCK SIZES
IN
HALLOWELL
SOLID STEEL
COLLARS

Precision machined for shafts from 3/16" to 3" diameter inclusive.

Write for prices and name of your nearest distributor.

SPS

STANDARD PRESSED STEEL CO.
JENKINTOWN 35, PENNSYLVANIA

IT'S WHAT IS IN THE SOAP THAT MAKES THE DIFFERENCE

RONYL DULLER S
A new Emulsion type duller for Nylon Hosiery

May be used with usual resin finishes

ECONOMICAL
as less finish is needed to get the same firmness.

No additional duller needed

So. Office - 205 S. Church St., Charlotte, N. C.

RICHMOND OIL, SOAP AND CHEMICAL COMPANY INC.

Export Agents
HOWARD G. GODFREY AND CO., INC.
436 Fourth Ave.
N. Y. 16, N. Y.
Cable Address
Godfreyco

TUNE UP

For Smoother Flyer Performance

You don't wait until your automobile breaks down. You keep it in good running condition with periodic tune-ups—because it pays! *It pays with flyers too!*

Ideal Machine Shops' FLYER TUNE-UP SERVICE is a complete package of all the conditioning services needed to put a normal flyer (not in need of major repairs or rebuilding) in tip-top operating condition.

IDEAL'S FLYER TUNE-UP SERVICE

Cost is small compared to a complete repair job. In fact, Flyer Tune-Up actually *saves* you money in these ways: (1) Smoother operation prolongs life of flyers and spindles, cuts down on repair and replacement costs, (2) you get better build and more uniform quality on every bobbin, (3) you reduce expensive down-time.

Ideal's Flyer Tune-Up Includes:

- SELECTO-SPEED BALANCING*, an exclusive Ideal process balances every flyer at the exact running speed specified by your mill. By having every flyer on your frame balanced at the same speed—the speed of the frame — you get the smoothest, steadiest flyer operation known today.
- NOSE STRAIGHTENING, a newly developed Ideal service, presses off-center flyer noses into perfect alignment with barrel and spindle, eliminating the jerking motion which causes thick and thin places in roving.
- SLOT GAUGING—Flyer slots adjusted to your specified hank roving.
- FLYERS AND PRESSERS BLOCKED to give perfect shape and maximum build of roving on bobbin.

NO INCONVENIENCE

There's no loss of running time. Ideal will supply extra flyers to your mill while yours are being tuned up.

Don't wait until your flyers *demand* repair. Start now on a regular schedule of periodic flyer tune-ups. See our representative, or write us for full details.

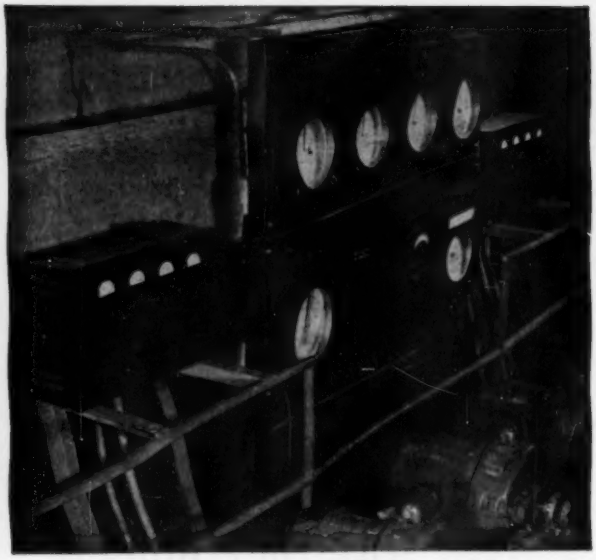
IDEAL MACHINE SHOPS INC.

Phones 4161 and 4391

*Patent applied for

BESSEMER CITY, NORTH CAROLINA

27TH YEAR OF CONTINUOUS SERVICE TO TEXTILE MILLS



CONSTANT CONTROL OF WARP YARNS. These Bristol instruments automatically control temperature, liquid level and pH on the sheet of warp yarns running through the dye-slasher of Unistel-Batchelder range at Empire Cotton Division, Woods Mfg. Co., Welland, Ontario.

HOLD pH VALUE AUTOMATICALLY

Hundreds of Bristol automatic pH controllers and recorders are used to hold pH at the value known to produce the best results.

With pH in important processes stabilized—time, money and materials are saved, and a uniform quality product results.

Textile mills here and abroad use Bristol continuous pH controllers and recorders on such applications as *neutralizing* after carbonizing and scouring, *conditioning* water for dye and bleach house, *neutralizing* plant waste.

Bristol pH instruments on such applications as these and others in your plant will help you produce better quality at less cost. A typical installation—including other Bristol textile instruments—is shown above.

Write for bulletins on Bristol pH instruments and other Bristol instruments for the applications listed at the right. Address THE BRISTOL COMPANY, 103 Bristol Road, Waterbury 20, Conn.

BRISTOL INSTRUMENTS FOR TEXTILE MILLS

FOR COTTON WEAVING AND FINISHING:

Automatic control for raw stock, yarn, and piece goods, dryers, sour pit, mixing water, boiling-off kettles, and bleaching kettle.
Temperature control for dryers.
Humidity control for dryers.
Slasher control.
Kier-boiling control system.
Dry can control.
Automatic control of dye jigs, dye machines, dye kettles.
Humidity recorders for carding, combing, drawing, spinning, weaving.
Flow meters for measuring steam to each department.
Liquid level recorders and controllers for water tanks and wash wheels.

FOR WOOLEN AND WORSTED:

Automatic temperature control for scouring, drying, dyeing, steaming and water mixing.
Coordinated process control for dyeing and wash wheel.
Humidity control for sorting, carding, weaving, spinning.
Time-temperature control of dye vats, machines and tubs.
Liquid level control for water tanks and wash wheels.
Tachometers for yardage through tentering dryer.
Automatic temperature control of water supply.
Control for back washers and back wash dryers.
Controls for scouring, carbonizing, and neutralizing.
Decating controls.

FOR SYNTHETICS:

Control for degumming tanks.
Control for dyeing.
Slasher control.
Control for bleaching and drying.
Humidity control for twist set box.
Humidity control in spinning room.

FOR FINISHING:

Control for scouring, boarding and dyeing.
Temperature control of conditioner.
Control for washing and bleaching equipment.
Completely automatic decating controls.
Humidity recorders and controllers.

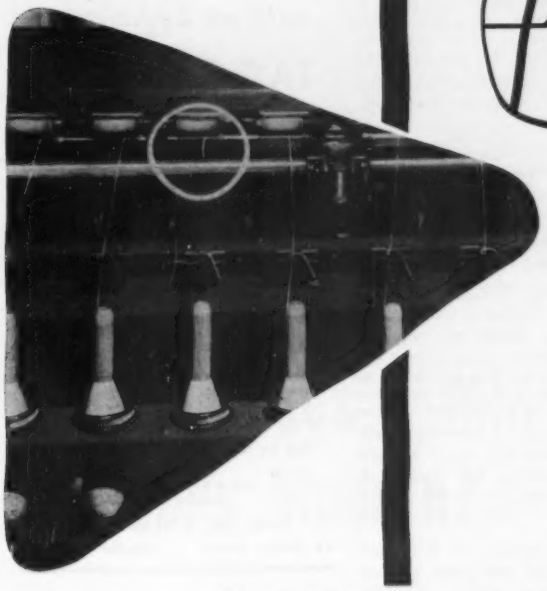
FOR POWER PLANT, WATER SUPPLY AND PLANT WASTE DISPOSAL:

Flow meters for steam and water.
Recording voltmeters and ammeters for electric lines.
Recording gauges for steam pressure, etc.
Recording thermometers.
Draft recorders and controllers.
pH and flow meters on waste disposal system.

THE DEPENDABLE GUIDEPOST OF INDUSTRY

BRISTOL

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS



PNEUMAFIL®

"Eliminates Critical Shortages of Spinning Labor"

"We would not have been in position to turn out the production that we are now turning out had it not been for the fact that we had installed Pneumafil, thereby eliminating a shortage of labor in our spinning rooms," writes the president of a Georgia mill which operates more than 40,000 Pneumafil equipped spindles.

Because Pneumafil made possible the operation of the same number of frames with less labor, he writes that it was possible to transfer the extra spinners to a third shift, "thereby starting additional equipment on much needed production of essential goods."

Much of this production is for essential Armed Forces use—for pup tents; for packaging food, ordnance, supplies, and delicate instruments; for bomber wings, clothing, etc. Much of the rest goes to essential civilian use. Hence Pneumafil is contributing materially to war effort.

"Spinning jobs will become more critical as the labor supply tightens and we believe that it will be to the interest of the country as a whole to install as much Pneumafil as possible," he adds.

Pneumafil is a production weapon which spinners should investigate at once.

Cotton
Wool
Worsted
Rayon
Jute
Asbestos
Tow
Blends

South American and Continental Europe:
Luwa, S.A., Zurich, Switzerland

Canada:
Ian M. Haldane & Co.
P. O. Box 54
London, Canada

Mexico:
Compania De Industria Y,
Comercio, S.A.
Mexico, D. F., Mexico

PNEUMAFIL **CORPORATION** • 2516 Wilkinson Blvd., Charlotte, N. C.

Sales Offices: Boston—Philadelphia—Atlanta

MOBILIZE YOUR MATERIALS HANDLING

with

MOBILIFT

Lev-R-Matic DRIVE

FORK LIFT TRUCKS

Mobilize your materials handling and production flow with MOBILIFT. . . . Only MOBILIFT gives you Lev-R-Matic, push-pull, easy-to-operate grouped controls with NO GEARS TO SHIFT . . . plus efficient compactness for speed and maneuverability in restricted places.

Get more work done in less time at less cost with MOBILIFTS!

NEW STAND-UP MODEL "E" 2,000-LB. CAP. TIER-MASTER tiers 3 pallets high from an overall collapsed height of only 72". It easily enters truck bodies and low clearance doors.

* STAND-UP MODELS available with 63", 72" and 83" Mast.

SIT-DOWN MODELS with 63" and 83" Mast.

Grouped 2-Way Levers Perform All Jobs

PUSH & PULL

NO GEARS TO SHIFT

MOBILIFT Lev-R-Matic DRIVE

WRITE TODAY for complete information.

MOBILIFT CORPORATION

835 S. E. MAIN ST., PORTLAND 14, ORE.

CHICAGO • E. RUTHERFORD, N. J.

DALLAS • ATLANTA • BERKELEY

and to improve the quality of our production.

Our dyer stated:

"The actual dollars-and-cents savings that we can calculate and that we have mentioned by no means tell the whole story. We cannot even begin to put a value on such things as improved hand, standardized finishes, and consistent operations. Frankly, since we have had this equipment in the place, I do not know how we got along without it."

Small Knit-Plant Layout

(*Continued from page 149*)

The first thing to consider about a new space is whether it allows room for expansion. While no mill can know definitely how soon or how fast it will grow, every business hopes to expand its operation. If a mill that was crowded moves into new quarters without allowing any room for expansion, it certainly has made a costly mistake considering the expense involved in moving plus the lost production incurred in moving to another location.

Before we moved, we first made certain that our new space gave us ample room for expansion. Actually, we have room to expand at least 100% before we would be pinched for space.

Our floor is made of concrete that was chemically treated before we moved in to prevent the top layer of concrete from crumbling and turning into dust. Because the floor is made of concrete we couldn't run our electrical work under the floor as we would have in the case of a hardwood floor.

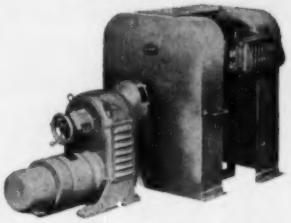
We could either run the electrical tubing along the floor to the machines or have it come down from the ceiling. We chose to run it on the floor because this method is cheaper, and if we ever decided to put a wooden floor over the concrete, the tubing would be concealed from view.

We have the latest type Supreme machines with 80-end yarn racks and pattern placers on all 32 feeds. Each yarn rack measures 8 ft. in diameter, and we took this figure into consideration when we planned the layout of the machines. The machines were placed so that we would have 24 in. between the yarn racks.

This space leaves ample room for the knitter and mechanic to operate freely; and at the same time, it permits the use of ladders and yarn trucks around the machines. After installation, all machines were levelled with the aid of Isomode neoprene pads placed under the legs. The pads also

Solve your Textile Cutting Problem with an Efficient

TAYLOR-STILES CUTTER



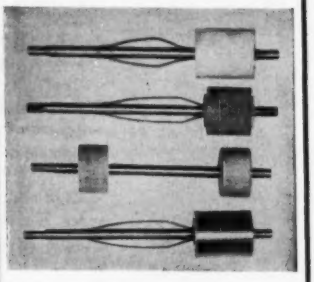
This type cuts fiber, rove, sliver, or continuous filament into uniform lengths. Other types cut rags, waste, etc. for processing and in various ways.

Used by efficient mills everywhere.

Let us know your textile cutting needs.

TAYLOR, STILES & CO.

15 Bridge Street Riegelsville, N. J.



"Wayne" WINDER SPINDLES

Made with either two or four springs or with round or hexagon spindle nut.

Send us a sample bobbin, giving the style spindle you want and we will make up a sample to fit, quoting prices on whatever quantity you need.

WAYNE Mfg. Co.

HONESDALE, PA.

Stonecutter Mills, Spindale, N. C., manufacturers of "Fabrics of Distinction"

What Makes a Mill Really Modern?

Spinning room at Stonecutter Mills—air-conditioned by Worthington equipment.

This is as modern-looking a mill as you've ever seen, isn't it?

It's Stonecutter Mills at Spindale, N. C.—a pioneer in weaving of quality dress fabrics of synthetic yarns.

Now look inside—in the Preparatory Department—which includes tinting, sizing, drying, twisting and other operations to prepare the yarn for weaving. You can see its modern equipment, floor to ceiling.

* * *

And if you were there, you'd get the idea of the modern *air control* — which provides the proper temperature and humidity conditions for the processing, and which also, by filtering the air, keeps the mill and the products "spick and span".

* * *

This modern mill uses the *most modern* air conditioning equipment—Worthington.

A 750-ton Worthington centrifugal refrigeration system furnishes chilled water for air-conditioning the Preparatory Department. And the offices are air-conditioned by six Worthington package air conditioners, providing a total of 80 tons of refrigeration.

This installation, made by the Bahnson Co., Winston-Salem, N. C., is typical of the preference for Worthington air conditioning throughout the textile industry. From the complete Worthington line, *any* mill can find the *right* equipment for its needs.

For *more worth in Worthington* write Worthington Pump and Machinery Corporation, Air Conditioning and Refrigeration Division, Harrison, N. J.

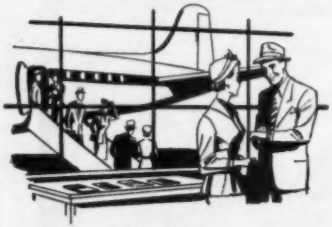
WORTHINGTON

24A1.45

AIR CONDITIONING AND REFRIGERATION

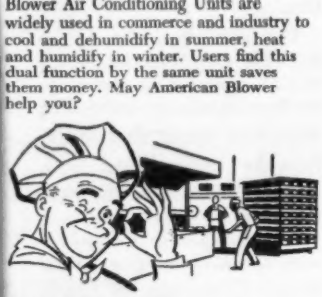
American Blower...a time-honored name in air handling

Birmingham, Ala., has a conveniently located American Blower Branch Office to provide you with data and equipment for air handling. You can reach American Blower in Birmingham by calling 7-2383. In other cities, consult your phone book.



TEMPERATURES TAMED...

Passengers and employees alike appreciate the pleasant atmosphere created by American Blower Air Conditioning Units in a large southern air terminal. These units circulate cool, conditioned air and maintain comfortable temperatures the year round. American Blower Air Conditioning Units are widely used in commerce and industry to cool and dehumidify in summer, heat and humidify in winter. Users find this dual function by the same unit saves them money. May American Blower help you?



BAKER'S DELIGHT...

A large midwest bakery recently installed several smartly styled American Blower Ventura Fans in its new, modern plant. Result—cleaner, pleasanter working conditions, improved employee efficiency. Ventura Fans maintain air circulation by exhausting hot, stale air quickly and efficiently. They are ideal for ventilating shops, factories, offices, and in many other applications. All carry Certified Ratings and are sound-rated for quiet operation. Good ventilation is good business in your plants, too.

NOW IS THE TIME...

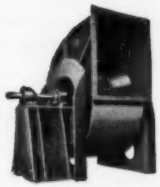
Plan now for winter heating. If your present heating system is inadequate or inefficient, replace or supplement it with American Blower Unit Heaters. These efficient Unit Heaters distribute heat evenly over a wide area, assure comfortable final temperatures everywhere. In many installations, American Blower Unit Heaters have paid for themselves in fuel savings alone within two to three years! Models for steam or hot water heating systems, also self-contained, gas-fired models.

Whether your needs are civilian or military, American Blower heating, cooling, drying, air conditioning and air handling equipment contributes toward improving over-all comfort and efficiency. For data, phone or write our nearest branch office.

Unit Heaters

Ventura Fans

Air Conditioning Equipment



Industrial Fans

Utility Sets

AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN

CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO

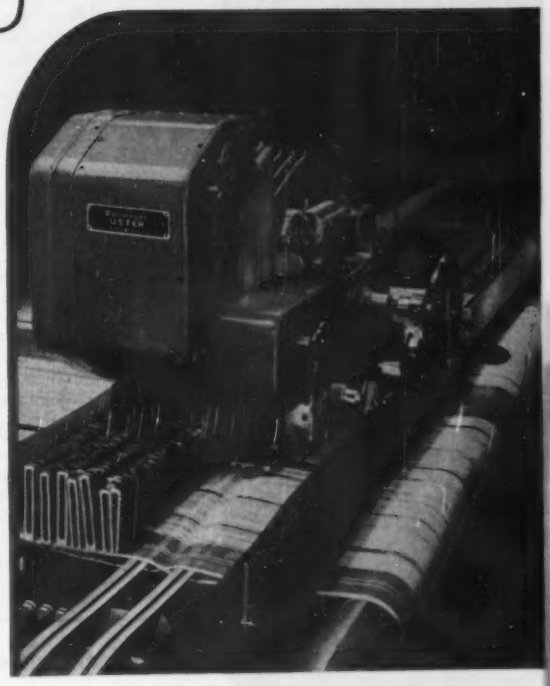
Division of American Radiator & Standard Sanitary corporation

YOUR BEST BUY AMERICAN BLOWER AIR HANDLING EQUIPMENT

Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

ANNOUNCING THE USTER DROPPER

Pins up to 18,000 open drop wires per hour



The Uster Dropper Pinning Machine completes the job 10 to 15 times faster than hand pinning and saves hours of labor and loom-down time. Interchangeable magazines permit it to pin from 1 to 12 banks of open drop wires at 300 per minute.

Makes Open Drops Practical

The Uster Dropper makes it possible for weavers to enjoy the many well-known advantages of open drops without suffering loss of loom production.

Pins Portable or Stationary

Although usually used for pinning on the loom, the Uster Dropper can be used with equal efficiency for stationary pinning away from the loom.

Let us show you how the Uster Dropper can save you hours of labor and down time and permit you to fully enjoy the economy of open drop wires.

In Canada: Hugh Williams & Co., 47 Colborne Street, Toronto, Ontario

USTER CORPORATION, CHARLOTTE, N. C.

80 Boylston Street, Boston 16, Mass.

act as a cushion to absorb vibration set up while the machines are in motion.

The lint problem is a particular disturbing one for any knitting mill that uses cotton. We specialize in fancy fabrics knit from cotton that are used mainly in the polo-shirt trade. We had used overhead fans in our old quarters to keep the top stop motion clear of lint, and we decided to continue to use them in our new quarters.

These fans are suspended from the ceiling, and one fan is mounted over each machine. Before a roll is cut off, the fan is started and run at the slowest speed for about a minute, which is sufficient time to blow away any lint which might have accumulated on the top stop motion and on the top of the cones. The fans are not operated at any other time. Enough draft is created to also blow off some of the lint on the bottom tension ring.

All our yarn and fabrics are stored on wooden platforms 4 in. high, 24 in. wide, and 72 in. long. This size will accommodate any of our cartons, and the platforms are light enough to be easily moved by hand to any desired location.

All cartons of yarn are weighed and checked as soon as they enter the plant. They are then transferred to the storage area. Yarn that is used on the machines is stored around the outside perimeter of the knitting area. No cartons of yarn are allowed to stand between the machines.

The rolls of cloth are weighed, marked, and stored on platforms near the shipping door. Each roll is enveloped in its own cloth to protect it from dust and dirt.

Dyehouse Instruments

(*Continued from page 159*)

2. PENETRATION OF HEAT. How quickly heat will penetrate into the fabric depends on the difference between the temperature of the fabric and the liquor, the nature of the fabric, its surface, and the rate of penetration of the hot liquor. Open-width dyeing, for example, warms the fibers much more quickly than batch dyeing.

The nature and amount of process-time lags also influence the closeness of control obtainable. It is obvious that control action can only take place after a change of temperature has reached the thermostat bulb. The position of the latter is, therefore, important.

Another factor influencing heat

Buy
MONTICELLO
Card room bobbins with gun barrel finish inside and out, precision made to your specifications.
Warp spinning bobbins for high-speed production and quality yarns . . . made from Hard Rock Maple.
Filling Quills made from Hard Rock Maple
Cones individually tested for balance
MONTICELLO
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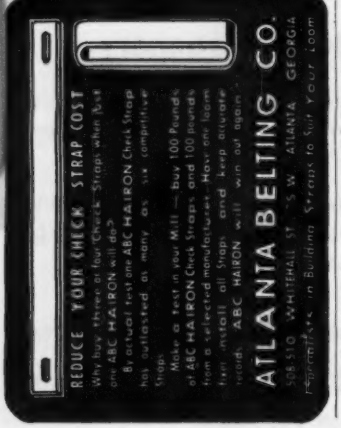
MONTICELLO, GEORGIA



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Interchangeable repair parts and units for modernizing, standardizing brush motions, even pressure roll stands.

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Carefully manufactured gears in stock for combing, gilling and spinning.

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Manufacturers of Worsted Machinery
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TEXTILE
GUIDES
of
genuine Synthetic Sapphire
hardest man-made
material

FEATURES
- √ Most resistant to abrasion.
- √ Chemically inert.
- √ Non-porous.
- √ *Capable of highest polish—or any lesser degree.*

These guides are invaluable for the problem application.

Write Today for full information

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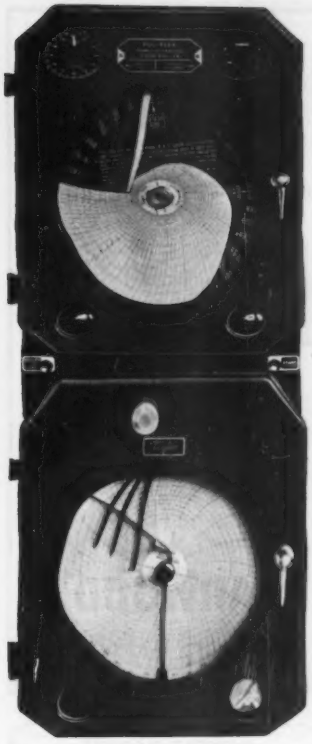


PUSH THIS BUTTON...

and Get Better Dyeing at Lower Cost!

YOU can save money on any kind of dyeing and get more uniform dyeing every time, with Taylor's automatic FULFLEX* Time Schedule Recording Controller.

1. No Cams to Cut. Operator simply sets three dials for *any* rate of rise, hold temperature and hold time.

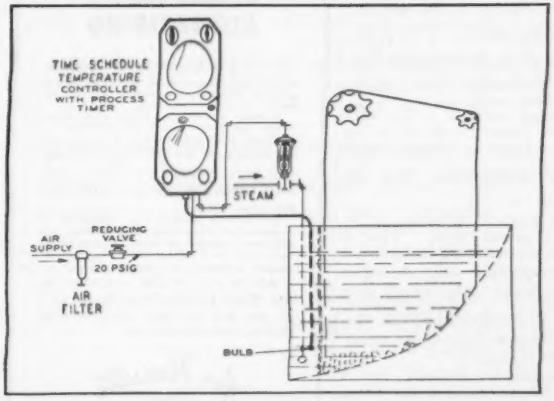
2. Operator just presses the button and Taylor Control signal light tells him when cycle is completed.

3. Repeats any part of the cycle. For additional rise and hold periods, if required, operator simply resets dials and presses the start button again.

4. Controlled rate of cooling is available as an optional feature.

This is just a single example of how Taylor is cutting costs, and improving product for textile mills all over the country. For the whole story, write for BULLETIN 98199, Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

Instruments for indicating, recording and controlling temperature, pressure, humidity, flow, liquid level, load, speed and density. *Trade-Mark



TAYLOR INSTRUMENTS MEAN ACCURACY FIRST IN:

PIECE DYEING
PACKAGE DYEING
BEAM DYEING
SKEIN DYEING
TOP DYEING

penetration is "heat load," or the demand for heat from the bath. If the fabric is continuously dyed, the heat load will remain constant as long as the rate of travel remains steady. Process-time lags will also remain steady, but only if the thickness of the fabric and its content and construction remain the same.

A heavier fabric and greater speed increase heat load. In batch dyeing, when a bale of fabric is dumped into the bath, there is a sudden increase of load and a consequent drop in temperature. A regulator has to counteract this drop fairly quickly.

A large liquor volume is good for controlability, because a great quantity of heat can be stored within the mass of the liquor. Disturbance of the load, like the immersion of a batch, causes less drop of liquor temperature in large vats than it does in smaller dye jigs. Similarly, disturbances in heat supply, such as a drop of steam pressure, have less temperature-change influence on large amounts of liquor than on small.

Variations in steam pressure add enormously to the duty of an automatic regulator. Close bath-temperature control cannot be expected when frequent changes of pressure in the steam mains occur, unless elaborate instruments are used and properly maintained.

3. CONTROLLING HEAT INPUT. Gradual control or, as it is sometimes called, throttling control, [TW, April, '50, p. 113] can be performed in various ways, sub-classified into various methods of heat input.

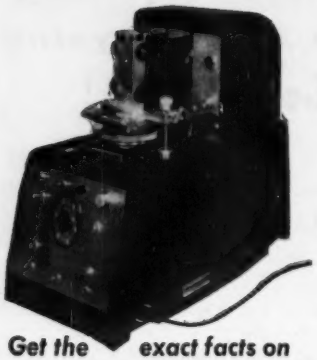
"Proportional control" is the simplest of these methods. By it, action of the valve is based on the amount of deviation of temperature from the desired value.

"Floating control" is produced by a motorized geared valve. This is closed at the set bath temperature; but once the temperature falls, it begins to open the valve wider either at a constant or an accelerated speed. Incorporated switches reverse the motor and valve movement.

"Proportional-plus floating" has a valve that moves much faster when far away from the set temperature, but slows down its movement near the control point. This procedure avoids over-shooting of temperature.

Offset, or drift, occurs because neither of the above methods can avoid "wandering" of the control temperature when a heavy load is put in suddenly, or when there is a change in rate of heat supply. Control temperature will fall with rising load and rise with falling load, but to a much smaller degree than in an uncontrolled

Anyone can get
EXACT DATA ON WEAR!



Get the exact facts on
ABRASION
FLEXING
FOLDING
of any fabrics

A multipurpose precision instrument for measuring resistance to surface and edge abrasion, flexing and folding of such materials as woven and knitted, napped and pile fabrics, hosiery, felt, nonwoven and coated fabrics, yarns, threads and cordage, etc. Self contained. Gives direct evaluation of quantitative parameters. All tests made with specimen dry or immersed in water, oil or other liquids. No combination with other test methods required. Automatic end points secure definite results of high reproducibility, minimize need for operator evaluation. Versatility and speed make it suitable for research and quality control. Design is such that it is possible to obtain reliable data by personnel with no special skill required.

Sturdy construction permits continuous operation with minimum maintenance. Please feel free to consult us upon particular questions relating to the testing of materials in the range of the Universal Wear Tester.

CUSTOM
SCIENTIFIC INSTRUMENTS, Inc.
P. O. Box 170 Arlington, N. J.
CUSTOM BUILT LABORATORY EQUIPMENT

"WHEN YOU THINK OF FEEDERS-

-YOU THINK OF-
HARWOOD"
Geo. S. HARWOOD & Son
40 Legrange St., Worcester 8, Mass.

DOUBLE BARREL
ADVERTISING

Advertising men agree—to do a complete advertising job you need the double effect of both Display Advertising and Direct Mail.

Display Advertising keeps your name before the public and builds prestige.

Direct Mail supplements your Display Advertising. It pin-points your message right to the executive you want to reach —the person who buys or influences the purchases.

In view of present day difficulties in maintaining your own mailing lists, our efficient personalized service is particularly important in securing the comprehensive market coverage you need and want.

Ask for more detailed information today. You'll be surprised at the low overall cost and the tested effectiveness of these hand-picked selections.

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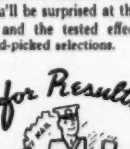

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HOW TO SAVE MONEY
ON SMALL-VOLUME BLEACHING

get increased uniformity . . . faster bleaching . . . lower bleaching costs

By Du Pont Continuous

Peroxide Bleaching with the Butterworth "Junior" Unit

If your requirements call for a production capacity of 500 to 1,000 lbs. per hour, the Butterworth-Du Pont "Junior" Continuous Peroxide Bleaching Unit can give you the same low-cost, high-quality results that are possible with full-scale ranges.

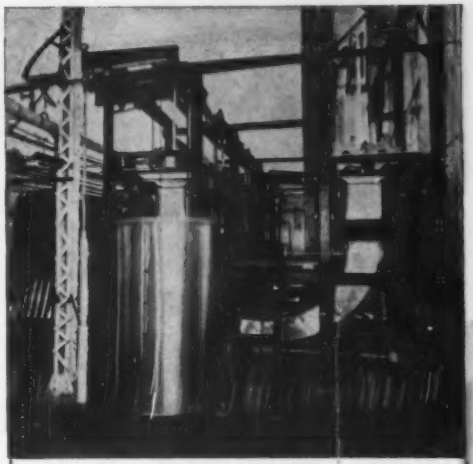
This job-tested, space-saving bleaching system has been designed expressly for small-scale and specialty work. It is particularly suited for use in the following types of plants:

1. Small bleacheries and mills producing 100,000-300,000 yards per week of white goods, goods for dyeing and printing, colored yarn shirtings and fancy dress goods, or any combination thereof, in the 3-7 yds./lb. class.

2. Large bleacheries which have small lots (100,000-300,000 yds./week) of specialty fabrics which are not run in the regular continuous system because they are too small.

3. Mills processing tubular cotton knit goods.

Mills using the Butterworth-Du Pont "Junior" Unit have realized direct savings in money paid out for steam, chemicals, and operating costs. And this controlled process gives uniform bleaching, keeps fabrics strong, eliminates rehandling and most "seconds."



This two-stage Butterworth-Du Pont "Junior" Unit at Kerriglen Finishing Company, Providence, Rhode Island, has been in regular operation since May, 1950.

Archie Stevenson, President of Kerriglen, writes:

"Our 'Junior' Bleaching Range is producing between 3500 and 4000 yards per hour of 80 x 80 cotton print cloth suitably bleached for our printing process. Through use of the unit, there has been an appreciable saving in bleaching costs.

"The bleached cloth is extremely uniform and the full strength of the cloth is apparently retained."

Du Pont does not build or sell bleaching equipment, but our Technical Servicemen are always ready to help you . . . in analyzing your needs, laying out a system, training personnel and starting operations. Find out more about continuous peroxide bleaching by mailing the coupon below today.

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CONTINUOUS PEROXIDE BLEACHING

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REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

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Please send me more information about Du Pont Continuous Peroxide Bleaching Systems.

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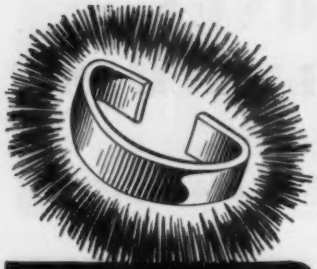

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Ring Travelers

They Measure Up On Every Job

There's a *right* Dary Ring Traveler to do any spinning or twisting job—for any type of yarn.

Call in your friendly Dary representative. He'll show you the *right* traveler to help your production meet those tough specifications—get high quality in great quantity, at any operating speed.

Next time you order,
Specify DARY Ring Travelers

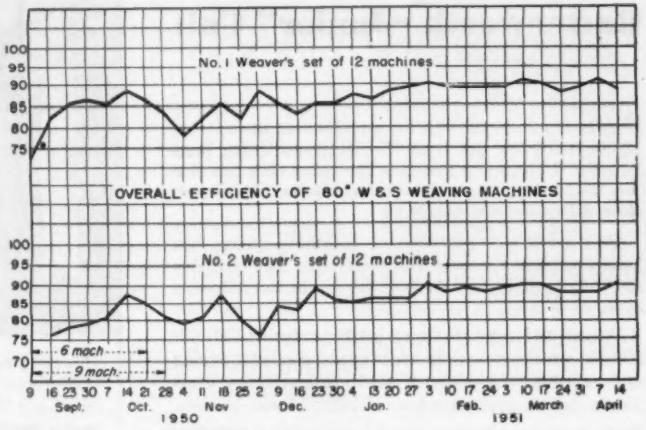
process. Heavy changes of process loads should therefore be minimized when the above controls are installed.

Gradual Controllers

Various methods are used to provide a gentle, gradual movement of a regulating unit, actuated from an electrical controller. The most common method is to use a Wheatstone bridge, and to utilize the instrument pointer or pen to move a slider on a slide wire. This movement depends on a change in the controlled process variable, and upsets the balance of the bridge in relation to the amount of deviation of the controlled variable

(Continued on page 338)

W & S Weaving Machines Push 90% Efficiency in One Mill



***HERE'S THE EFFICIENCY RECORD** of two weavers' sets of 12 80-in. Warner & Swasey weaving machines both in one mill. A 7-mo. period is covered. Each point represents a 6-day average for three shifts. Down time for warp changes, stoppages, and mechanical troubles are included. The lower efficiencies at the left are laid to inexperience with the machines on the part of weavers, fixers, and management.*

Speed is 240 ppm. The 24 looms require two weavers, one fixer, and half a cleaner. Fabrics produced are 10 to 14 oz. with 2/36 warp and 1/18 to 1/24 filling.

Shirley AUTOMATIC DOFFER Under Tests in British Mills

Could you use two doffers that can take care of 11,200 spindles on coarse counts? The Shore & Landlake Mills, Littleborough, England, has two such doffers. They're a pair of automatic doffers developed by Shirley Institute [TW, Dec. '49, p. 101] and being tested in the mill. Ten other machines are under test in other British mills.

The spinning room at the Shore & Landlake Mills was laid out so that the doffers could be used. Wider alleys between frames were necessary to allow installation of a rail along which the doffer runs. The doffer handles 12 spindles at a time.

The saving in time over hand doffing is not substantial, it is reported. Ends down on starting up after doffing are said to be reduced.

One employee is needed for each machine to push it from frame to frame, fill the magazine, and take doffed bobbins out. Two doffers handle 11,200 spindles on coarse counts.

Original cost of one machine is about $1567, not including the rail.

ANOTHER DOW CORNING SILICONE PRODUCT

DeCetex 104

the most durable water-repellent for synthetic fabrics

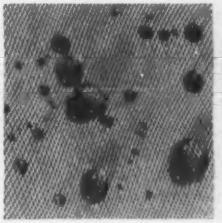
Here's the kind of durability you have been looking for in a water-repellent treatment for synthetic fabrics. Materials that have been the most difficult to treat—acetate, viscose, nylon, Orlon, Dacron and mixtures of natural and synthetic fibers—can now be given a durable water-repellent finish. And by durable, we mean a treatment that will retain a spray rating of 90 to 100 after 10 dry cleanings; 80 after three 2-hour launderings.

There's no change in porosity, color or color-fastness. The silicone finish is free from mark-off; it imparts a full, soft "hand" and it has a stabilizing effect on some materials.

Furthermore, DeCetex 104 is easily and inexpensively applied from a water emulsion with conventional equipment. You do not have to wash or neutralize the treated fabric and it remains odorless even after aging.

In an ounce of DeCetex 104 you get millions of invisible silicone umbrellas that don't fold up after the first two or three dry cleanings. If you are not already familiar with DeCetex 104, write for technical data sheet AJ-9.

This DeCetex treated fabric looks and feels like any ordinary nylon marquisette with a weave as open as a window screen. But water rolls over the fabric unable to wet the fibers.



She's wearing her umbrella of DeCetex treated rayon skarkskin. All she has to do is brush the little droplets off her suit, and she'll be as dry and look as fresh and neat as ever.

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FIRST IN SILICONES

DOW CORNING CORPORATION

MIDLAND, MICHIGAN

NEW
SCHIEREN BELT
Has Stretch-Resistant Core That Maintains Belt Tension

SCHIEREN DUXBAK RAYON-CORE FLAT LEATHER BELTING has a layer of rayon tire cord between two layers of leather. The result combines the pulley gripping ability of first quality leather with a stretch-resisting core that maintains initial tension for months or even years without shortening of belt. This feature increases machine output and reduces maintenance. Supplied as endless belts or with prepared laps or in rolls.

Many RAYON-CORE BELTS are now being used on strippers and on the eccentrics of cards. Ideally suited for pivoted-base or automatic tension-control drives, mule spinning frames, winders and circular knitting machines. Belts have run for three months or longer without being taken up, dressed or adjusted.

OTHER SCHIEREN PRODUCTS for textile mills include the new, patented, Duxbak, endless check strap, which outlasts ordinary checks 3 to 1; all types of straps, pickers, aprons, discs; Rayon-Core leather V-belts; etc.

Write for complete information or price quotations on any of the above products.

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SC 36

News of the Month

Chemstrand Fiber Named. "Acrilan" is the name of the new acrylic synthetic fiber now being produced in pilot-plant quantities, up to 1,000,000 lb. per annum, at Marcus Hook, Pa., by Chemstrand Corp., Philadelphia, Pa. The new fiber name was officially registered at the end of July. Full production will begin next year at a new plant now being built at Decatur, Ala. [TW, Dec., '50, p. 254]. An annual production of 30,000,000 lb. per year is planned.

Fiber-E Production. An altered and highly abrasion-resistant form of viscose-process rayon, called Fiber E, has been put into limited commercial production at the Old Hickory, Tenn., plant of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del. The new version of rayon has the property of crinkling into a fuzzy wool-like fiber when treated with a dilute solution of caustic soda. When combined with yarns of other types of fibers and finished, striking effects are obtained. Two-tone color effects are also obtained from a single dye bath. Crimpability is built into the yarn by special spinning techniques and a special combination of chemicals in the bath that coagulates the viscose solution into a fiber.

Wool Research Project. Throughout the resting period and in the physical processing of wool, there are no significant changes in the basic properties of single fibers, research and processing trials on foreign and domestic wools under study at Textile Research Institute, Princeton, N. J., have shown. The most important changes in wool throughout the resting period pertain to the assemblies of fibers in the form of top and roving. Resting wool definitely results in an appreciable increase in the strength of top and roving. These changes correspond to increases in the efficiency of worsted operation as noticed and studied by Forstmann Woolen Co., Passaic, N. J. The wool-research project is sponsored

Textile Calendar

American Chemical Society, diamond jubilee, New York, Sept. 3 to 7, 1951.
AATCC, Southeastern Sect., Columbus, Ga., Sept. 8, 1951.
National Instrument Conference, Sam Houston Coliseum, Houston, Texas, Sept. 10 to 14, 1951.
AATT, meeting, Builders Club, New York, Sept. 12, 1951.
Fiber Society, fall meeting, Swampscott, Mass., Sept. 13 and 14, 1951.
National Assn. of Cotton Mfrs., 97th annual meeting, New Ocean House, Swampscott, Mass., Sept. 13 and 14, 1951.
Southern Hosiery Mfrs. Assn., annual meeting, Hotel Roanoke, Roanoke, Va., Sept. 13 and 14, 1951.
AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Sept. 14, 1951.
AATCC, Hudson-Mohawk Sect., Jack's Restaurant, Albany, N. Y., Sept. 21, 1951.
ASME, fall meeting, Copley-Plaza Hotel, Boston, Mass., Sept. 21, 1951.
AATCC, Piedmont Sect., annual meeting, Charlotte, N. C., Sept. 22, 1951.
AATCC, Mid-West Sect., Morrison Hotel, Chicago, Ill., Sept. 29, 1951.
AATT, meeting, Builders Club, New York, Oct. 3, 1951.
Carded Yarn Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 4, 1951.
39th Annual Safety Congress and Exposition; Stevens, Palmer House, Congress, and Morrison Hotels; Chicago, Ill.; Oct. 8 to 12, 1951.
Textile Quality Control Assn., fall meeting, School of Textiles, Clemson College, Clemson, S. C., Oct. 12, 1951.
AATCC, national convention and Textile Exposition, Statler Hotel, New York, Oct. 17 to 19, 1951.
North Carolina Cotton Mfrs. Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 18 and 19, 1951.
Packaging Institute, annual forum, Hotel Commodore, New York, Oct. 22 to 24, 1951.
AATCC, Hudson-Mohawk Sect., Hotel Utica, Utica, N. Y., Oct. 26, 1951.
AATCC, Northern N. E. Sect., Lowell Textile Institute, Lowell, Mass., Oct. 26, 1951.
AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Oct. 26, 1951.
AATCC, R. I. Sect., Providence Engineering Society, Providence, R. I., Oct. 26, 1951.
AATT, meeting, Builders Club, New York, Nov. 7, 1951.
Textile Research Institute, annual meeting, Waldorf-Astoria Hotel, New York, Nov. 8 and 9, 1951.
AATCC, R. I. Sect., Johnson's Restaurant, Providence, R. I., Nov. 16, 1951.
AATCC, Northern N. E. Sect., annual meeting, Boston, Mass., Nov. 30, 1951.
AATT, meeting, Builders Club, New York, Dec. 5, 1951.
AATCC, Hudson-Mohawk Sect., Jack's Restaurant, Albany, N. Y., Dec. 7, 1951.
AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Dec. 7, 1951.
AATCC, Southeastern Sect., La Grange, Ga., Dec. 8, 1951.

1952

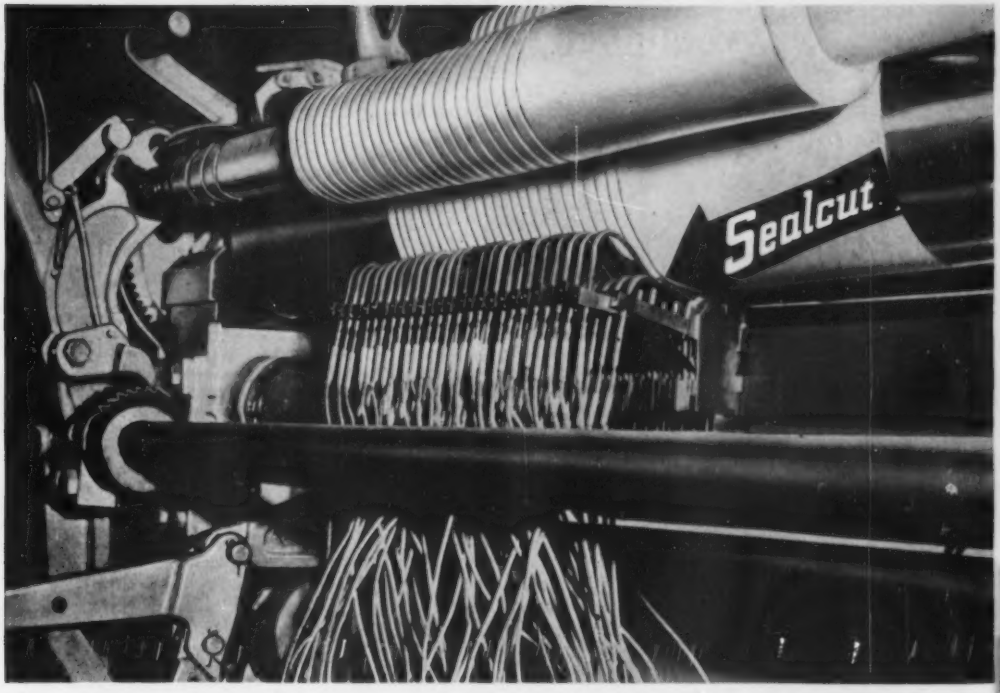
Plant Maintenance Show, Convention Hall, Philadelphia, Pa., Jan. 14 and 17, 1952.
Fiber Society, spring meeting, Clemson House, Clemson, S. C., April 16 and 17, 1952.
Cotton Mfrs. Assn. of Georgia, convention, Boca Raton Hotel and Club, Boca Raton, Fla., April 16 to 18, 1952.
Knitting & Allied Crafts Exposition, sponsored by Natl. Knitted Outerwear Assn. and Underwear Institute, Grand Central Palace, New York, April 21 to 25, 1952.
4th International Lighting Exposition and Conference, Cleveland Auditorium, Cleveland, Ohio, May 6 to 9, 1952.
17th Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 6 to 11, 1952.

1953

Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J., April 27 to May 1, 1953.

1954

American Textile Machinery Exhibition, sponsored by National Association of Textile Machinery Manufacturers, Atlantic City Auditorium, Atlantic City, N. J., April 26 to May 1, 1954.



FUSED EDGES *prevent fraying on acetate rayon strip . .*

The new Camachine SEALCUT slitter unit is designed for use wherever acetate rayon fabric must be cut into strip and wound into clean, finished rolls. Used as the cutting elements on slitting-rewinding machines, the SEALCUT units employ electrically heated blades which separate the fabric into narrow strip. *SEALCUT heat seals* the edges of the strip instantly as it is cut. SEALCUT slitter units operate efficiently at speeds up to 250 fpm, and may easily be set to slit strips to any width, from ¼" up, across the full width of the fabric.

The cutting edge of the SEALCUT unit is a straight blade, electrically heated under positive temperature control. The heated blade separates the fabric by *melting* a razor-thin slit as the fabric passes between the blade and the rewinder platen roll.

Fusing is confined to minute edges on each side of the separation. These edges cool instantly after separation, with no apparent beading and no danger of fused layers in the rewound rolls. SEALCUT strip winds into smooth, clean-cut rolls, while the sealed edges provide strong resistance to fraying and ravelling in future use.

The SEALCUT acetate rayon slitter unit is recommended for use with the Camachine Type 26-3 Slitter-Rewinder.

Sealcut

ELECTRICALLY HEATED

ACETATE RAYON SLITTER-FUSER

Camachines and Camachine attachments are backed by Cameron Machine Company's half century of specialization in the design and manufacture of better roll production equipment for paper, textiles, rubber and plastics.

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You can depend on Camachines®

one hundred percent return in eight months

Unusual?

Yes. But several mills have made it, replacing five to ten older models with two new spoolers paying for themselves in LESS than 8 months.

These mills had figured in the extremely low capital investment, the vastly improved quality of the spools, and they had noted that the new spooler could do the work of two, three, even four older machines.

In short, they'd considered the radical changes the Model 60 spooler would make in their dressing departments . . . and all to be written off in just a few months. Then . . . they bought.

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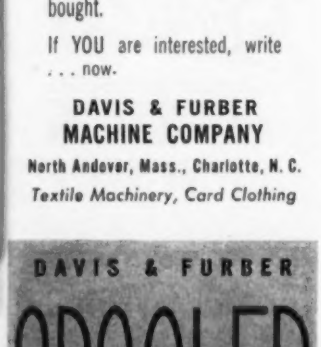

NEWS *of the Month*

(Continued)

U. S. COTTON-PRODUCTIVITY TEAM visited several British mills during the summer and was photographed during its visit to the show room of Platt Bros. (Sales) Ltd. Left to right are J. COLLINS, Platt Bros.; C. ROBBINS, Bates Mfg. Co.; E. MARLAND, Platt Bros.; A. GANT, Glen Raven Cotton Mills; E. HOWCROFT, Textile Machinery Export Group; H. PRATT, Mt. Vernon-Woodberry Mills; H. MOSELEY, U.T.W.A., A.F.L.; B. DOBSON, Platt Bros.; J. LEFEVRE, U.T.W.A., A.F.L.; H. CLINCH, Platt Bros.; G. DUNLAP, N. C. State School of Textiles; S. HORNE, Anglo-American Council on Productivity; C. DAWSON, Burlington Mills; A. AITKEN, T.M.M. Ltd. and Platt Bros.; G. HARDMAN, T.M.M. Ltd.; G. RANDALL, Platt Bros.; F. SUGDEN, British Cotton Board; J. HART, Joanna Cotton Mills; T. BELLIS, Platt Bros.

by The Wool Bureau, Inc., New York, N. Y.

ISO Recommendations. The official designation of twist for textile yarns as either "S" or "Z," depending on the direction of turns in the yarn, was one of the two recommendations for international use that was approved by the Council of the International Organization for Standardization (ISO) at its recent meeting in Geneva, Switzerland. The second recommendation concerns the reference temperature for limit gauges as used generally in the inspection of component parts in the mechanical field and other industries.

ASME Wool Symposium. A symposium on new systems of woolen and worsted manufacture will feature the fall meeting of the Textile Div., A.S.M.E. The meeting is to be held at the Copley-Plaza Hotel, Boston, Mass., the 21st of this month, starting at 9:30 a.m. Papers scheduled include "The Pacific Converter," by Robert C. Willkie, director of engineering research, Pacific Mills; and "The Ambler Superdraft System," by Frank Pendleton, McGlynn Hays Industries, Inc. Two other papers will also be delivered, one each by a representative of Whitin Machine Works and Saco-Lowell Shops on wool preparatory and spinning processes.

Simplified Price Controls. Better than an OPS "bureaucracy" and the building up of all those orders that tend to put business in a strait jacket would be a simple law stating that a manufacturer or distributor may take any three months, for example, of a given year as his base period for his costs and mark-ups, Roy Cheney, president of the Underwear Institute, New York, proposed in his recent annual report to members. Periodically, Mr. Cheney suggested, the manufacturer or distributor could thus increase or decrease his ceilings to conform to the net increase or decrease of the cost of his materials, labor, and other costs. Findings would be reported to a central body, empowered to make investigations and bring violators to justice through regularly constituted courts or temporary "economic courts." Over half of underwear-manufacturing costs are material costs, the great part of them produced on the farm; while labor cost in terms of wages makes up nearly a fourth of total costs, Mr. Cheney said. Both of these factors are politically impossible to freeze or control to any measure.

Australian Wool Clip. The expected total of Australian wool clip for the 1951-52 season is 3,600,000 bales, each bale averaging 300 lb. Last season's production was about 3,561,000 bales. The 1949-50 season produced 3,501,689 bales. Estimates of Australian production of greasy wool during the 1950-51 season run to about 1,117,500,000 lb. About 1,800,000 bales from the new clip are expected to be offered for sale in Australia before the 1951 Christmas recess. Sales opened in Sydney on August 27 and in Adelaide on August 28.

German Cotton-Mill Survey. In 1952, West German cotton mills will have a potential consumption of 1,000,000

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Allen will soon announce a new Warper Beam of great importance to better production in high speed warping

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High Speed Warper Beams
Warper Beam Heads
Loom Beams
Adjustable Loom Beam Heads

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Representatives in all Textile Localities
and all Principal Countries of the World.

"GOOD WARPS ARE MADE ON GOOD BEAMS"

WESCO STOPMOTIONS
FOR
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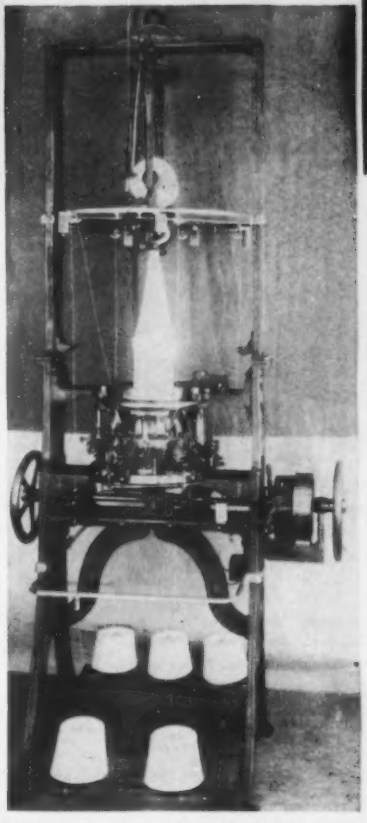

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Established in 1859, the Charles Cooper Company knew how to build Rib Knitting Machines. So with WESCO stop-motions, experience has been a great teacher and throughout the world today knitters specify WESCO for best performance on the machines they buy.

LOOK FOR WESCO
on all these knitting machines:

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Another of a Series of Knitting Machine Builders. Others to follow.

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Made Especially for TEXTILE MILLS

Textile superintendents furnished the ideas for a good broom especially adapted to the textile industry. The result is a superior sweeping tool — the Fuller Textile Broom. Light weight... flexible yet resilient enough to remove the finest lint. Extra wide flare... sweeping edge that does not heel over. Light weight metal casing protects broom's shoulders when sweeping under machinery. For further information, write...

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In Canada: Fuller Brush Co., Ltd., Hamilton, Ont.

NEWS *of the Month*

(Continued)

bales of cotton, of which a minimum of 700,000 bales is hoped for from the United States, it has been estimated by Wallace Clark & Co., Inc., New York, international management consultants. A team of four management and textile men is at the moment in the middle of a three-month study of West German cotton spinning and weaving mills under the sponsorship of ECA and the German Mission to ECA. The purpose of the survey is to make recommendations to increase output with present equipment, as well as on new equipment that may be acquired later with additional capital investment. Recommendations on general management policies, including marketing, research, and other programs, will also be included.

J. L. DELANEY (left), general superintendent of Joanna Cotton Mills Co., Joanna, S. C., was recently elected president of Southern Textile Assn. He is being congratulated by A. R. Marley, superintendent of No. 2 Mill, Erwin Mills, Inc., Erwin, N. C., the retiring president.

Mobilization News Items

Synthetics Expansion Looms. A large synthetic-fiber and -yarn expansion, sparked with the blessing of NPA and DPA, appears assured soon. From 75 to 100 applications for certificates of necessity, possibly totaling $1,000,000,000, have been held up while DPA completed its survey of the country's needs. Increased production poundage to be allowed in the defense program is seen to be over 600,000,000 lb. Almost 250,000,000 lb. are allocated to wool-extender production and the balance to rayon expansion.

Emasculated Price Control. Eventual provision in the newly extended Defense Production Act for automatic adjustment on nearly all manufacturing costs up to July 26, 1951, will in the long run upset price-control plans badly, according to Washington and New York trade sources. Some OPS officials are resigned to an automatic, self-adjusting procedure on ceiling pricing by manufacturers. Others are waiting for clarification on the various CPR regulations and registration deadlines set up previously under the 1950 Act. Mandatory deadlines may be extended beyond the previously set date of Aug. 13, 1951.

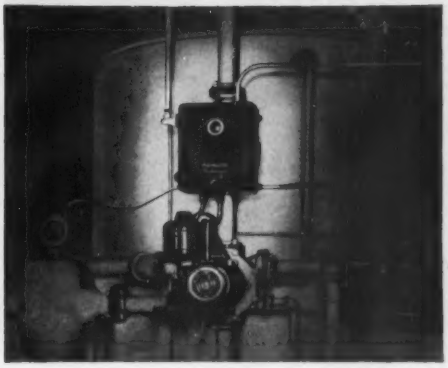
Coated-Fabrics Pricing. Optional alternate methods of computing increased labor and material costs for coated fabrics under a supplementary regulation to the Manufacturers' General Ceiling Price Regulation, CPR 22, have been set up by OPS. The new supplementary regulation permits a manufacturer to exclude the cost of the fabric in computing the proportion of his labor cost to the total volume of his business, and to figure his material cost increases separately for fabric and coating. Supplementary Regulation 11 is effective for manufacturers who are already pricing under CPR 22. For others, the supplementary regulation is effective whenever CPR 22 becomes effective for them.

DPA Small-Business Guide. A booklet entitled *Mobilization Guide for Small Business* has been put out by the Defense Production Administration as a guide to help small- and medium-sized firms that wish to make a contribution in meeting defense needs and in maintaining the highest possible output of consumer goods. Chapter heads include defense contracts and procurement, civilian production, financing, production- and facility-control methods, and regional- and field-office addresses.

New Arctic Uniform. A lighter-weight uniform that provides better protection against extreme cold and more freedom of movement than the present uniform has been developed by the Army Quartermaster Corps. The outfits have been tested in Alaska, and have proved satisfactory in temperatures of 50° below zero instead of merely 25° below. Based on a layer principle, the uniform has both outer and intermediate shells of water-repellent, wind-resistant materials that permit the wearing of as many layers as the temperature requires. Insulating layers button into outer-clothing layers and thus are easy to remove without exposing the wearer to the cold. Better body ventilation is provided by loose-fitting underwear that allows the body to be gently ventilated when too warm.

CONVERT TO

Automatic Controls



PRODUCE **a constant supply of zero-soft water**

SAVE **operator's time . . . lower operating cost**

PROTECT **your equipment from hard-water scale**

These new automatic valves and controls are easily installed on your present water-softening equipment.

Automatic operation completely removes the human element from regeneration, saves costly man-hours of labor and maintenance.

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Replace your present mineral with one of Permutit's new, high-capacity zeolites.

They produce up to ten times as much soft water, 50% faster than previous minerals. They last longer between regenerations, lowering operating costs. They save you salt.

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WATER CONDITIONING HEADQUARTERS FOR OVER 38 YEARS

Stainless Steel CYLINDERS

...accurate...true running

Blickman Built Stainless Steel drying cylinder . . . 60 inch diameter. Plate No. 7252

Stainless Steel drying rolls . . . high pressure steam, built to A S M E code specifications.

FOR TROUBLE-FREE SERVICE UNDER MODERN HIGH SPEED TEXTILE OPERATIONS

For protecting the fabrics you process, Blickman Built cylinders are being recommended and used by an increasing number of manufacturers of textile finishing machinery. The reason is simple. Blickman specializes in the fabrication of stainless steel cylinders to give you a more accurate, more dependable, safer cylinder. Our special plant equipment and controlled welding procedures assure rugged construction for long service. Blickman Built cylinders are available through many textile machine builders or through us.

- **DIMENSIONS**—Built in any diameters or lengths to meet your requirements.
- **FINISH**—Polished on our own automatic machines to as high as number 6 finish, if you require it.
- **CODE REQUIREMENTS**—Cylinders built to conform to local and ASME national board codes.
- **INSPECTION**—Tested at twice working pressure . . . thoroughly checked for leaks.
- **CONSTRUCTION**—Mechanically sized for accuracy and true running. Furnished with or without heads.
- **TYPES**—Dry cans, presetting cylinders, cooling cylinders, etc.

Specify Blickman Built cylinders through your textile machine builder . . . or send your inquiry direct to us. Quotations furnished promptly.

See our exhibit at the 23rd exposition of Chemical Industries, Grand Central Palace, New York, November 26th to December 1st, 1951.

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Manufacturers of stainless steel textile equipment, dye boxes, linings, cylinders, dry cans, rails, hoods, tanks

Operates efficiently in all dyes and bleaches without ill effect to bearing or the liquids. The self-lubricating quality of the bearing is inherent in the material — no oil impregnation is used and the bearing never needs lubrication. Morganite Bearing and other carbon parts are non-warping, impart no taste or odor, are unaffected by, and will not contaminate, chemical solutions. Being self-lapping and polishing, they offer long-lasting high speed, high pressure service.

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Manufacturers of CARBON MOTOR and GENERATOR BRUSHES, CARBON PILES and SELF-LUBRICATING CARBON SPECIALTIES

NEWS ABOUT Suppliers

Equipment Suppliers

Allen Beam Co., New Bedford, Mass., has appointed Albert E. Hawkins sales representative for its line of high-speed warper beams, beam heads, and adjustable loom-beam heads in New England, New York, New Jersey, and Pennsylvania. Southern sales are in charge of Joseph Bowler, Jr., with headquarters at Greenville, S. C.

American Monorail Co., Cleveland, Ohio, has joined forces with a group of British business leaders to form British Monorail Ltd. The new company will manufacture in England the specialized equipment now being produced by the Cleveland company, with emphasis on materials-handling equipment for the textile industry. Sir John Dodd, a former member of Parliament and past president of the Assn. of British Chambers of Commerce, is chairman of British Monorail Ltd.

Charlotte Mfg. Co., Charlotte, N. C., has appointed A. D. Ennis, formerly with Ashworth Brothers, Inc., Charlotte, to sell card clothing to the textile trade.

Conmar Sales Corp., Newark, N. J., has named as sales representative William W. Woodard, sales engineer for the past three years with H & B American Machine Co. Mr. Woodward's headquarters are in Atlanta, Ga.

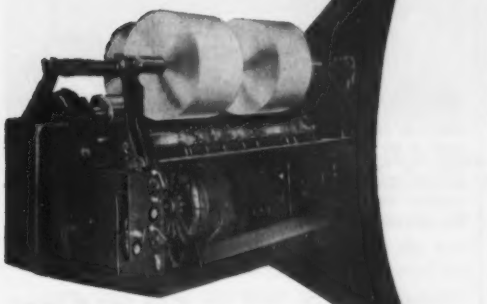
Cyclone Fence Div., American Steel & Wire Co., has appointed Joseph F. Boyce Eastern-district sales manager, located at Newark, N. J. He was formerly district sales manager at Waukegan, Ill. Carl A. Ten Hoopen, Sr., has been appointed assistant general sales manager, and has moved to company general headquarters in North Chicago, Ill.

Emmons Loom Harness Co., Lawrence, Mass., and Charlotte, N. C., has named Ralph Gossett & Co., Greenville, S. C., to represent the firm there. The Gossett company will act as suppliers and consultants on the use of all company products.

JOHN E. RENNER has been appointed general sales manager of Lincoln Engineering Co., St. Louis, Mo. He has been with the firm for 15 years.

ROGER H. BROWN (left) has been appointed Eastern district manager for Warner Electric Brake & Clutch Co., Beloit, Wis. He was formerly in charge of operations in New York, Philadelphia, and Washington, D. C. R. F. EDGAR (center) is now Midwestern district manager of the industrial division, while ELTON MIOTTEL (right) has been made a field engineer, working out of Milwaukee.

BEFORE YOU BUY–
consider
the new B & S
duplex REWINDER



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- Simplicity of design
- Variable-speed Drive
- High speed (up to 1500 ft. p.m.)
- Compact—saves space
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- Hydraulically driven differential Rewind Shafts
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- Accurate pressure control between Drum and Rewind Shafts
- All hydraulic and air Piping enclosed in Frame
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- Efficient and economical

The new B&S #15 Duplex Rewinder is powered by a Louis Allis Eddy Current Type Variable-speed Drive. A variable volume pump driven by an A. C. motor supplies power to the rewind shafts, and the winder is powered by the Eddy Clutch. By placing the entire drive beneath the machine, B & S designers have saved valuable floor space.

Accurate pressure control and precision winding are achieved by pneumatic cylinders for raising and lowering the rewind arms. For full center winding rewind shafts can be locked in "out" position.

To eliminate all possible vibration, the B & S Duplex Rewinder is mounted on heavy cast-iron bedplate. Fully enclosed piping and easily accessible controls assure smoothness and efficiency in operation, as well as ease and economy in upkeep.

For further details write to The Bagley & Sewall Company, 500 Fifth Avenue, New York 18, N. Y.

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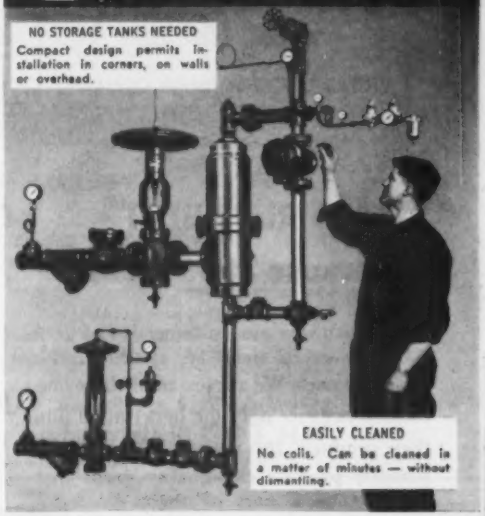
TEMPERATURE CONTROL IS ESSENTIAL *in* BLEACHING and DYEING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Compact design permits installation in corners, on walls or overhead.
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No coils. Can be cleaned in a matter of minutes — without dismantling.

Pick INSTANTANEOUS WATER HEATERS *provide*

ACCURATE CONTROL + REQUIRED VOLUME

HEATS WATER INSTANTLY

PICK Heaters are entirely automatic to provide and accurately maintain water temperatures up to 180° F. Water is heated **instantly**—by steam injection. Exclusive Pressurizer Piston eliminates pipe hammering and shaking. Installation is simple, requiring only ordinary pipe connections. Available in seven sizes with rated capacities of 10 to 200 gallons per minute.

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Exeter Manufacturing Co.
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It Runs BEST because it *IS* BEST!

That's why our customer list of yarn users in every industry, sparkles with quality names. We are proud of these customers, because only the best can go into their products. It is very satisfying to consistently produce the quality yarns that help us be a part of their successful future.

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8's to 50's — singles

CARDED . YARNS
2's to 30's — single and ply

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viscose, acetates, blends
8's to 30's — single and ply

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News About SUPPLIERS (Continued)

PERRY M. PARROTT (left) and JOE M. BALLENTINE are the principals of the new firm that has been appointed Southern-states sales agent for Van Vlaanderen Machine Co., Paterson, N. J. Formerly in Smith, Drum Co. sales work in the area, the men represent the complete line of Van Vlaanderen dyeing and finishing machinery. The new office is in Greenville, S. C.

General Electric Co., Schenectady, N. Y., has appointed James H. Goss a staff assistant to Nicholas M. DuChemin, general manager of the small-apparatus divisions. Formerly manager of engineering of the control divisions at Schenectady, Mr. Goss is now making his headquarters at Lynn, Mass. Dr. Louis T. Rader has been appointed manager of engineering at the control divisions. Harry L. Palmer is now assistant to the manager of engineering there, and Benjamin Cooper is division engineer of the electronics and regulator engineering division. David C. Prince, a GE vice president and former head of the general engineering and consulting laboratory, has retired after 32 years of service.

Ginsberg Machine Co., Inc., New York, has been appointed sole agent for *Lite-Mite*, a fluorescent sewing light manufactured by Stocker & Yale Co. The new light is the product of five years of research.

Medley Mfg. Co., Inc., Columbus, Ga., has announced the resignation of B. C. Cole and W. T. Heard, former partners, and the complete reorganization of the firm under the present name. Cason Callaway, Jr., LaGrange, Ga., has become vice president and treasurer. Other officers are L. H. Morrison, president; and Harry George, secretary.

Muschamp Knitting Machinery Ltd., Manchester, England, has been formed to take over Muschamp interests in the hosiery field. The new company will handle machines such as those of the Kidde Mfg. Co., Hemphill Co., and Tompkins Bros. Co. The firm will also represent Albert Haase, Wuerttemberg, Germany, knitting-needle manufacturer.

Southeastern Sound & Electronics Corp., Greenville, S. C.,

FOSTER MACHINE CO., Westfield, Mass., exhibited two models of its winders at the recent Lille, France, International Textile Exposition in the booth with its European representative, Muschamp Taylor Ltd., Manchester, England. The model-78 winder in the foreground wound a 28-kilo package of coarse yarn, said to be the largest yarn package ever wound in Europe.

Another "first"!

CARBOMATIC "UNA-RAY" OVEN

PATENTS PENDING

COMBINES the advantages of 3 types of oven-heating:
(1) INFRA-RED RADIATION (2) CONVECTED HEAT (3) HEATED AIR—with added turbulence

Greatly increased efficiency! For example: *40* linear feet of "Una-Ray" Oven equal the productive capacity of *70* feet of a conventional oven-type. Saves thousands of dollars in equipment cost and operational economies. No burning, scorching, spotting or marking of goods. No crocking. No "gas fading" or color migration. Uniform color is insured. A general-purpose oven (of any capacity needed) that provides accurately-controlled working temperatures up to 550°F. For drying; drying and curing in one operation; resin fusing; Nylon setting, etc. *Write for Bulletin TW-9*

CARBOMATIC CORPORATION • **Pioneers in Textile Infra-Red**
24-81 47th Street **Long Island City 3, N. Y.**

Southern Branch: Textile Specialty Co., Greensboro, N. C. *New England Representative:* Peter Jarvell & Sons, 37 Brentwood Ave., Providence 8, R. I.

SARGENT'S MULTIPLEX BURR PICKERS

Picks, Burrs, Cleans the Wool Lap on BOTH SIDES

SARGENT pioneered the Burr Picker and built the first machine in 1860. Modern Multiplex Burr Pickers, by SARGENT, perform with the highest efficiency obtainable today in closer picking, without loss of fiber, and with least waste.

SARGENT'S MULTIPLEX BURR PICKING is a 4-POINT CLEANING PROCESS:

1. The feed rolls and main cylinder picks and opens the wool, and removes shives, straw, other waste matter.
2. Air currents from the exhaust fan removes light dust and dirt.
3. The wool, in open and lofty condition, is delivered to the first burr cylinder which exposes the burrs and waste. A high speed guard removes and throws clear the burrs and waste on the upper side of the wool lap.
4. The second burr cylinder guard picks and cleans the opposite or under side of the wool lap.

Write us for complete information

C. G. SARGENT'S SONS CORPORATION
Graniteville, Massachusetts, U.S.A.

SINCE 1852

LARGEST MANUFACTURERS OF STOCK DRYING AND WOOL WASHING EQUIPMENT IN AMERICA

...used for quality control, development and testing of products and processes

In the modern, new laboratory recently constructed by the Riegel Textile Corp., Atlas Launder-Ometers and Fade-Ometers make constant quality control possible by providing accurate washing and color fastness data on samples of fabrics being run through production lines.

As part of the research program inaugurated by Riegel officials, these Atlas-Ometers help also to provide complete information on each new fabric while it is still in the developmental stage as well as to maintain the high standard of quality in daily production. In this manner, Riegel avoids costly trial and error methods still practiced in some textile plants today.

Technicians at this laboratory conduct washing tests of the A. A. T. C. C. in the Launder-Ometer to determine the fabric's resistance to shrinking, its color fastness, and resistance to washing and mechanical action. The Fade-Ometer is used to obtain factual data regarding the degree of fading registered on the sample by sunlight, temperature, and humidity. The Atlas cycle timer unit can be set to duplicate any test at any time.

New research model Launder-Ometers with capacities ranging from 20 pint jars to 6 half-gallon containers are now available as part of the complete line of standard Launder-Ometers.

ATLAS ELECTRIC DEVICES COMPANY
361 W. Superior St., Chicago 10, Ill.

News About SUPPLIERS (Continued)

has opened a branch office in Atlanta, Ga., to service the area in all types of inter-plant communicating systems.

Steel Heddle Mfg. Co., Philadelphia, Pa., has been granted a tax write-off of $110,200 to speed construction of its plant at Paris, S. C. The company is closing its plant in Greenville and transferring all operations to the Paris plant. DPA permitted a write-off on 60% of the original application.

Chemical and Yarn Suppliers

Amalgamated Chemical Corp., Philadelphia, Pa., has added Alton P. Siddons to its technical staff. He will assist in the recently expanded service department that is now available to textile wet finishers.

American Cyanamid Co., New York, N. Y., has named H. C. Milton to the position of assistant district-sales manager of the Industrial Chemicals Div., Boston, Mass. An over-all company expansion of facilities for the production of basic chemicals at plants in Niagara Falls and Welland, Ont., has been made known. A further step in the expansion program will be the installation of equipment that will increase company capacity for the production of melamine at Willow Island, W. Va.

American Viscose Corp., Marcus Hook, Pa., has appointed Russell F. Crawford, Jr., a staff member of the Textile Research Dept. Mr. Crawford had been a member of the textile-applications laboratory at Rohm & Haas Co., engaged in research and development work on textile auxiliaries.

Firestone Plastics Co., New York, has opened a Southern-district sales office at High Point, N. C., to handle the sale of Velon upholstery sheetings. Norman C. Weisbecker, sales representative for the Southern area, has been transferred from his former headquarters at Pottstown, Pa., to be in charge of the new office.

Libbey-Owens-Ford Glass Co., Toledo, Ohio, has transferred Fred W. Segerstrom, district manager of industrial sales at Los Angeles, Calif., to the new fiber-glass division at Toledo as manager of superfine fiber-glass sales. He has been with LOF since 1939. Eugene Sinnett has been named plant production superintendent. Ralph Hayden is mechanical foreman of the new division.

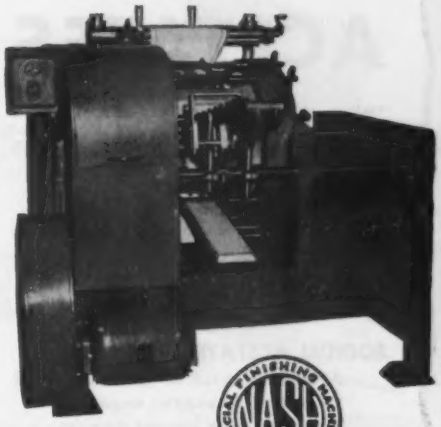
National Aniline Div., Allied Chemical & Dye Corp., New York, has elected as vice presidents H. J. Daigneault and M. A. Conner, both of whom have been associated with the company for over 30 years. Mr. Daigneault will continue to direct and co-ordinate sales of dyes, organic chemicals, and synthetic detergents. Mr. Conner will concentrate on manufacturing activities and long-range planning.

DR. L. D. BARRICK (left) has been appointed manager and R. M. LOCKE assistant manager of the newly formed fine-chemicals division of Pittsburgh Coke & Chemical Co., Pittsburgh, Pa. Dr. Barrick had been chemical director of Arnold Hoffman & Co., Inc., dyestuff division. Mr. Locke was formerly technical director of Arnold, Hoffman dye plant.

SAVE the Expense of Hand Washing with the No. 89 Nash AUTOMATIC BOBBIN WASHER

Washes flanged bobbins at 28 pieces per minute!

Textile mills throughout the country are finding the Nash No. 89 a time and money saver. It's a ten-spindle machine that does the entire washing and wiping operation automatically from start to finish. Eliminates the time and expense of hand washing. No dirt is left on the bobbin which would soil the yarn on the finished fabric. The cleaning solution used has a 140-degree flash point and is not toxic, assuring safe machine operation. The solution has no harmful effects on yarn, either natural or synthetic.



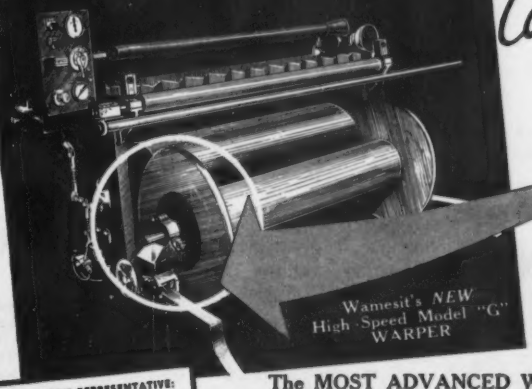
Write for complete descriptive bulletin

We also manufacture Automatic Bobbin Finishers, Quill Polishers and special-purpose machinery.

J. M. NASH COMPANY

DEPT. BW-89—2364 N. 30TH STREET MILWAUKEE 10, WISCONSIN

WAMESIT WARPER COMPANY
40-44 CHURCH STREET LOWELL, MASS.



DENSITY *Controlled*

(1) The even and equal density is controlled hydraulically. (2) The constant yarn angle, (3) from delivery roll, (4) to nip of beam, (5) and pressure roll, (6) thus metering the yarn onto the beam, produces section beam warps of EVEN and EQUAL DENSITY from barrel to head with absolute UNIFORM TENSION of warp ends throughout the beam diameter build-up.

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The MOST ADVANCED WARPER ON THE MARKET TODAY
Proven Worthy of Your Consideration for Control of PRODUCTION and QUALITY

THE MANY FEATURES INCLUDE ● VARIABLE SPEED, REMOTELY CONTROLLED, PERMITS TOP PRODUCTION OF ANY TYPE OF YARN ● SPEEDS 200-800 Y.P.M. ● ELECTRIC STOP MOTION ● MEASURING DEVICE ● SMOOTH CLUTCHING ● ACCOMMODATES BEAMS UP TO 32" DIA. HEADS

Wamesit Warper Company are also manufacturers of . . . .

- COTTON, RAYON and SYNTHETIC YARN WARPERS AND CREELS
- BALL WARPING MACHINES
- ALL TYPES OF EXPANSION WARPERS, BEAMER AND SLASHER COMBS
- NARROW FABRIC WARPERS
- INTERMEDIATE DRESSER STAND FOR WOOLEN AND WORSTED
- EXPANSION NECK REEDS
- REPLACEMENT PARTS FOR SACO-LOWELL and ENTWISTLE WARPERS

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ACETATES

"NIAPROOF" POWDER
Water-soluble, stable, basic aluminum acetate for water-repellent finishes.

COPPER ACETATE
Non-dusting, normal cupric salt, soluble in water.

POTASSIUM ACETATE
Anhydrous—N.F. and technical.

SODIUM ACETATE
Anhydrous and N.F. 60%, (technical 60% for rubber compounders exclusively).
All grades low in iron and chlorides.

SODIUM DIACETATE
Anhydrous and technical. A convenient powdered source of acetic acid.

ZINC ACETATE
A completely soluble, free-flowing, normal salt.

VINYL ACETATE
Stabilized, liquid monomer.

SUCROSE OCTA ACETATE
Bitter white powder.

• • •

NIACET acetates are made from synthetic acetic acid by carefully controlled processes assuring high quality and uniformity.

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News About SUPPLIERS (Continued)

National Starch Products, Inc., New York, has named Dr. R. W. Merritt and S. F. Thune assistant vice presidents of the company. Mr. Thune had been general manager of the Midwest division, with headquarters in Chicago. Dr. Merritt has been co-ordinating the operations of the manufacturing department since 1946.

Nopco Chemical Co., Harrison, N. J., has appointed Walter B. Morehouse sales manager of its textile-specialties division, succeeding Harold C. Meegan who died earlier in the year. Mr. Morehouse has been associated with Nopco in an executive sales capacity since 1940.

Seydel-Woolley Co., Atlanta, Ga., has added V. R. Mills to its sales staff. He will make headquarters at Griffin, Ga. E. A. Scott and B. F. Murray retired recently after 25 years of service with the company. B. F. Blackwelden is now superintendent.

Westvaco Chemical Div., Food Machinery & Chemical Corp., New York, N. Y., has named W. R. Kulow assistant divisional sales manager of the Phosphates Div., with headquarters in New York. Until recently, Mr. Kulow was associated with the textile-chemical department of Monsanto Chemical Co. H. D. Robinson has been made assistant divisional sales manager, Alkali Div., also with headquarters in New York.

Other Services

Institute of Textile Technology, Charlottesville, Va., has named Dr. J. L. Vaughan president of the Institute, succeeding Stephen McClellan, resigned. Dr. Vaughan has served as consultant to the Institute for the past four years. During the last year, he has been chairman of the committee on academic studies, and was a member of the executive committee.

New England Textile Foundation, Providence, R. I., has offered high-school graduates $50,000 in textile scholarships in 1952 if they wish to take textile courses at any of four textile colleges in New England. The Foundation has made similar scholarship awards annually since 1946. Funds are contributed by companies who see the industry's need for college-trained and technically-educated recruits. Up to 25 four-year scholarships, worth $2,000 per annum, will be awarded. Application deadline is Dec. 15, 1951.

N. C. State College, Raleigh, N. C., has had a velvet carpet loom installed in the School of Textiles that will enable the school to strengthen its instructional program in weaving. Donor of the loom was Bigelow-Sanford Carpet Co., Inc., of Thompsonville, Conn.

Philadelphia Textile Institute, Germantown, Pa., has made three appointments that go into effect this month. Harry H. Birkby has been promoted to assistant professor in dyeing. George G. Byler has been made associate professor of chemistry. Miss Lillian Wyatt, librarian at P.T.I., has been promoted from instructor rating to assistant professor. New appointments in weave-formation and fabric analysis are: Bert Amador, special assistant instructor; David Herman, instructor; and David Giese, assistant professor.

Textile Institute, Manchester, England, has elected five American men to fellowship: Richard S. Cox, dean, Philadelphia Textile Institute; Herbert F. Schiefer, physicist, Textiles Section, National Bureau of Standards; George S. Buck, Jr., technical director, National Cotton Council of America; Walter M. Scott, assistant chief, Bureau of Agricultural and Industrial Chemistry, U. S. Dept. of Agriculture; and Emery I. Valko, research consultant.

U. S. Dept. of Agriculture, Washington, D. C., has revised grade standards for American Egyptian cotton. The revised standards will supercede on August 1, 1952, the two sets of standards for American Egyptian cotton formerly in effect: one for the Pima variety and one for the SxP variety. Until next year they may be used permissively (by expressed contract provision) in the purchase and sale of this cotton.

You'll find CLINTON Quality Starches tops for every textile purpose!

CLINTON Textile Starches are scientifically manufactured with unvarying uniformity assured. Clinton Starches give your warp the necessary body, strength and pliability that means quality weaving every time. For years Clinton has been a leader in the production of starches for all textile purposes.

CLINTON

CLINTON FOODS INC.
CLINTON, IOWA

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Grady Gilbert, Box 342, Concord, N. C. Frank Rogers, 900 Woodside Bldg., Greenville, S. C.

For perfect card grinding

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★ Designed for grinding revolving flats—four simultaneously — dismounted from the cards. Absolute precision in setting is the aim.

★ Dronsfield's Patent-Traverse Wheel Grinder, No. 120

Dronsfield's Improved Grinding Roller, No. 112

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OLDHAM · ENGLAND

YOU GET

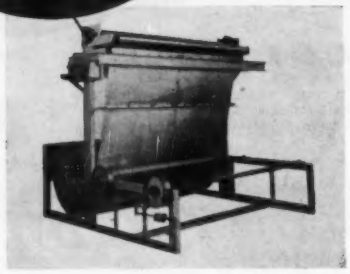
Continuous Production

NEW ROLLS SEWED ON *at FULL SPEED*

WITH

Mount Hope

CONTINUOUS ROLL FEED



Above unit is one of the many designs of Mount Hope Continuous Roll Feeds.

Adaptable to practically any continuous feeding requirement, Mount Hope Continuous Roll Feeds save labor, save time, save cloth, *cut costs!*

ANOTHER Mount Hope CLOTH HANDLING DEVICE

ASK FOR BULLETIN CRF TODAY.

MOUNT HOPE MACHINERY COMPANY

15 FIFTH STREET • TAUNTON • MASSACHUSETTS

NEWS ABOUT Mills

Cotton Mills

Adamo Co., Los Angeles, Cal., plans an expansion program that will increase cotton-carpet production by 40%.

American Thread Co., Clover, S. C., has let a contract to Webb Electric Co., Anderson, S. C., for extensions and improvements in the power system at the company's Hawthorne Mill. Pickell & Pickell, Greenville, S. C., is engineer.

Appleton Co., Anderson, S. C., a division of J. P. Stevens & Co., Inc., has begun a two-year expansion and modernization program that will cost about $2,000,000. Obsolete drawing and roving frames in the card room are to be replaced and Abbott automatic quilling is to be installed. Cards, slashing equipment, and looms are to be replaced or modernized.

Beaumont Mfg. Co., Spartanburg, S. C., plans construction of a new 50x70-ft. addition to cost about $100,000. The addition to the basement and first floor of the mill will be used to provide storage and accommodate additional machinery for manufacture of duck for the Army.

Borden Mills, Inc., Kingsport, Tenn., has installed an automatic cotton colorimeter in its testing laboratory. The mill is now planning to construct an extension to house a modern cafeteria for employees. A former transformer room has already been converted to a locker and shower room.

Bristol Lace Works Co., Bristol, R. I., expects to have its new plant completed by the latter part of September. When finished, the $120,000 plant will measure 52x176 ft. Roof of new structure will be supported by steel trusses, eliminating interior supporting columns. Company also plans to erect a 40x150-ft. dye plant adjoining new building at a later date.

Callaway Mills Co., La Grange, Ga., plans an expansion program for cotton-duck output that will cost about $25,000. Certificates of necessity have been granted by Defense Production Administration for the purpose.

Canadian Cottons Ltd., Montreal, Que., has expended $833,127 in capital additions for the year ended March 31, 1950, and $1,239,350 for the year ended March 31, 1951. These expenditures were made to fill an immediate need while a further study of company requirements was being made. A program to improve present facilities involving expenditure of $6,800,000 is planned over the next four years.

Candlewick Yarn Mills property in Cartersville, Ga., will become the site of operations for Kingston Mills, Kingston, Ga., when the company opens under temporary name of Kingston Mills, Inc. Actual purchase of property was made by J. K. Boatwright, La Grange, Ga., accountant and ex-treasurer for Callaway Mills, and J. C. Kennington, owner-manager of East Point Roller Covering Works, East Point, Ga.

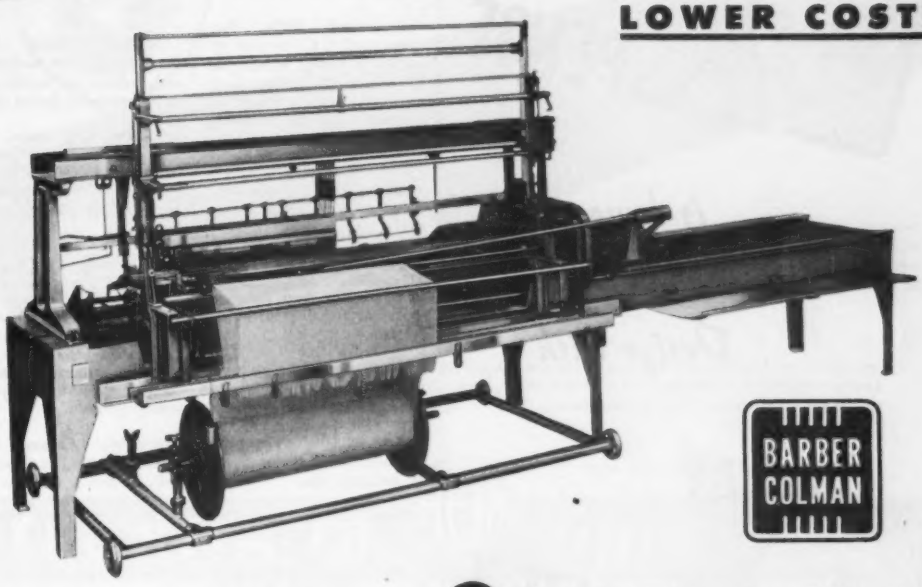
Cramerton Mills, division of Burlington Mills Corp., Cramerton, N. C., is planning a $200,000 construction project.

Dixie Mercerizing Co., Chattanooga, Tenn., is reported to have placed an order for 16 twisters with H & B American Machine Co., Pawtucket, R. I. The 16 will be in addition to 32 reported to have been already purchased.

Georgia Rug Mill, Summerville, Ga., has awarded a contract to Johnson & Johnson Construction Co., Rome, Ga., for additions and alterations to its building. Estimated cost is $442,764.

Gibbons Mills, Inc., Cedartown, Ga., new narrow-fabrics mill, is now in operation. The

FASTER REPLACEMENT
STRAIGHTER WARPS
LOWER COSTS



BARBER-COLMAN MODEL E *Warp Drawing Machine*

The Model "E" Barber-Colman Warp Drawing Machine is designed to cover the needs of a wide variety of weaving mills. Manufacturers of shirtings, broadcloths, lawns, voiles, sateens, ginghams, dress goods, and sheetings, or mills running filament rayon, will find this particular model extremely suitable. Mills having a predominance of cam loom weaving, or whose cloth construction does not require more than 8 harness and 6 banks of stop motion, and where styles and patterns are frequently changed, will find this model exceptionally useful.

Field reports show up to 4500 Ends per Hour
Will draw warp from 10 to 300 ends per inch
Will draw from flat sheet or 1 x 1 lease
Will draw from single or double beam or split sheet
Will draw 1 x 1 lease in double beam or split sheet

Warp threads are drawn through drop wires, heddles and reed
IN ONE OPERATION
from a pre-determined draft

HARNESS FRAME LENGTHS	
Size of Machine	Maximum Overall Length of Harness
48	54"
66	72"
86	92"

MACHINE CAPACITY
The Model "E" can be furnished in the following capacities at no difference in cost:
Read, 8 Harness, 6 Banks of Drop Wires
Read, 10 Harness, 4 Banks of Drop Wires
DROP WIRE CAPACITY: 9/32" through 3/4" wide

WILL DRAW
- Cotton Yarns
- Filament Yarns
- Spun Yarns
- Woolens and Worsteds
- Monofilaments

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

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ROCKFORD • ILLINOIS • U. S. A.
FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND MUNICH, GERMANY

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when you

Desize with

By removing starch *quickly*, *efficiently*, and *safely*—economical *Exsize-T* saves time and money in your desizing operations.

Easy to use! *Exsize-T* is not a chemical—but a harmless liquid enzyme concentrate. Carefully standardized to give uniformly perfect results. Write for free booklet today.

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* Copr. 1951, Pabst Brewing Company, Milwaukee, Wisconsin.

News About MILLS (Continued)

company will manufacture narrow fabrics for the slide-fastener and binding trades.

Greenwood Mills, Inc., Greenwood, S. C., recently opened a $750,000 building at 64 Worth St., New York, N. Y. The newly remodeled building provides approximately 50,000 sq. ft. of floor space for sales and executive offices. The company has also installed a new laboratory complete with latest testing and measuring devices.

Jewel Cotton Mills, Inc., Thomasville, N. C., manufacturer of cotton yarns, has plans for a $200,000 construction program.

Kilburn Mills, New Bedford, Mass., is planning the construction of a sewing-thread plant near Tryon, N. C., to cost $2,000,000. The plant will manufacture sewing thread for industrial use.

James Lees & Sons Co., Glasgow, Va., is erecting a one-story building to be used for weaving and treatment of duck. The new $300,000 building is expected to be completed this month and will manufacture 72-in. canvas now being produced in emergency quarters. 150 additional workers will be needed.

Maverick Mills' new White Horse plant, Greenville, S. C., has begun operation of some looms and spindles, although certain machinery is yet to be installed. The plant will eventually have 30,000 spindles and 500 looms.

Mills' Mill No. 2 Woodruff, S. C., is completing a $1,000,000 program of machinery replacement that included modernization in practically every department of mill.

National Automotive Fibres, Inc., Oakland, Calif., is making improvements and changes in equipment at its mill for manufacture of twisted-cotton floor coverings. The program is expected to be completed in October.

Newnan Cotton Mills, Newnan, Ga., has modernized and installed air conditioning in executive and clerical offices.

Opelika Mfg. Corp., Opelika, Ala., has acquired Superba Mills, Inc., Hawkinsville, Ga., and will use the Georgia mill to expand its toweling production.

Osage Mfg. Co., Bessemer City, N. C., is constructing a new two-story addition with 29,000 sq. ft. of floor space. The building will house additional looms, cloth room, supply room, and machine shop to round out the mill's modernization program.

Republic Cotton Mills, Great Falls, S. C., a division of J. P. Stevens & Co., Inc., has completed a new beam- and package-dyeing plant. The new unit is located within present Plant No. 3 and represents an expenditure of $120,000.

Seekonk Lace Co., Pawtucket, R. I., has let a $179,600 contract to Henry M. Soule Co., Pawtucket, for a one-story addition, and alterations and improvements in the present mill. Approval of the NPA has been secured.

Standard - Coosa - Thatcher Co., Piedmont, Ala., has let a contract to Andrew, Dawson & Shenesy, Anniston, Ala., for a cotton warehouse with a capacity of 1,800 bales.

Winnsboro Mills, division of U. S. Rubber Co., Winnsboro, S. C., has begun construction of a special reservoir to hold waste water from dyeing and Ustex-treating operations. The reservoir will impound about 1,500,000 gal. Waste will be cooled, settled, aerated, and treated before it is released into nearby streams.

Woolen and Worsted Mills

American Woolen Co., New York, N. Y., has purchased Premier Worsted Mills, Raleigh, N. C. The plant contains 96 broad looms, 7,000 worsted spindles, and 3,600 twister spindles.

Appleton Fabric Products Co., Appleton, Wis., has plans for a 26x50-ft. addition.

Barnes Worsteds, Inc., Kingston, Mass., has arranged a loan of $175,000 through the

THE "HEART" OF THE NEW HEIM *Unibal* SWEEPSTICK

Instead of an oversized stud hole which elongates during operation, the new HEIM Sweepstick has a Spherical Bearing consisting of an SAE 52100 chrome steel ball bored to fit the stud, and oscillating in bronze bearing inserts.

Any misalignment is compensated for by this unusual spherical bearing. Shock is absorbed in both directions of the stroke, and a softer and smother pick action results. Production interruptions due to sweepstick failures are cut to a minimum. You can count on longer life and improved action with this durable HEIM Sweepstick.

Please write for stock list and prices.

THE HEIM CO. HEIM **FAIRFIELD, CONN.**

WORLD-FAMOUS

SCHLUMBERGER COMB

for French-Type

Worsted Mills

OUTSTANDING for ready accessibility of all operating parts (including cylindrical comb) and for remarkable cleanliness of product. Settings made quickly.

Also other worsted preparatory machinery

U. S. Representative: LESLIE A. FIELD, 230 Princeton Blvd., Lowell, Mass.

N. SCHLUMBERGER & CIE
GUEBWILLER, ALSACE, FRANCE

Founded 1808

how to prevent spoilage...

...THE *Versenes**

VERSENES* CONTROL QUALITY

In Wet Processing and Finishing the Versenes can prevent spoilage of goods in these ways:

They completely and permanently soften hardest water *without* precipitation.

... prevent the formation and deposition of insoluble soaps on textile fibers

... remove insolubles *after* they have been deposited

... assure cleaner fibers, deeper dye penetration, level dyeing

... improve cleaning and foaming action of synthetic detergents

... prevent and/or remove iron stains in any caustic solution

... inactivate and prevent contamination from either divalent or trivalent metals

... dissolve natural greases, oils and proteins

... prevent oxidation of fats, oils, soaps, fatty acids, organic materials

... give *exacting* chemical control over cations in solution.

All of these things are vitally important to the control of quality and the prevention of spoilage in textiles.

VERSENES*—NEW SOLUTIONS TO OLD PROBLEMS

The four Versenes used in textile processing are powerful organic chelating (complexing) agents. Chemically, they are the sodium salts of ethylene diamine tetra acetic acid and other polyamino acids. Versene (regular) is the most efficient general complexing agent and water softener. *Versene* Fe-3 prevents hard water deposits and iron stains. *Versene* Fe-3 Specific is the most powerful iron complexing agent known in the normal pH range. *Versene T* prevents and removes iron deposits from fabric treated with concentrated caustic. Available in liquid form, Versene T, like all Versenes, remains stable at high temperature and pH. Ask for sample and Technical Bulletin No. 2. Write Dept. D.

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News About MILLS (Continued)

RFC, to be used for operations on Government contracts.

Fimmco Textile Mills, Worcester, Mass., has been organized to manufacture woolen fabrics and yarns.

Hatch Mill of Deering Milliken & Co. is nearing completion at Columbus, N. C. Built at a cost of $4,000,000, mill will produce fancy woolens. It is located near resort areas to give personnel easy access to recreation.

Island Woolen Mill, Baraboo, Wis., which has been closed for several years, has been sold by the McFetridge family to Makler Bros., Chicago, Ill. The woolen mill, which was built in 1863, is said to have largest water-power site on Baraboo River.

Naval Ordnance Plant, Milledgeville, Ga., has been sold to J. P. Stevens & Co., who leased the plant more than two years ago and have since that time established and placed in operation a mill for manufacture of woolens and worsteds under government contracts.

Palmetto Worsted Mills, Laurens, S. C., is expected to begin production shortly. The plant, which cost $100,000, consists of a new building combined with a remodeled one. The company will spin fine-count worsted yarn for knitting.

Priscilla-Maid Hand Weavers, Plymouth, Mass., has changed hands and moved from its old location at 18 Middle St. to 12 Union St.

Synthetics Mills

Beaunit Mills, Inc., Coosa Pines, Ala., is constructing a $15,000,000 office building and gate house at new local rayon mill, to be operated by North American Rayon Corp., an affiliated company. North American Rayon Corp. recently purchased outstanding capital stock of Jacquard Knitting Machine Co., Philadelphia, Pa.

Celanese Corp. of America is planning construction of a $30,000,000 rayon-manufacturing plant at Gallipolis Ferry, W. Va., at end of this year. The corporation has taken over 400 acres of land. When completed, the plant will employ approximately 3,000 persons.

Coopersburg Textiles, Inc., Coopersburg, Pa., has been sold by Paul Kernoff to Caeser DeKrane and will reopen under name of Coopersburg Silk Co. The 60-loom plant will have 70 persons working on dupioni and crepe neckwear fabrics.

Courtaulds, Inc., of England, has received U. S. government approval of plan to build a new $10,800,000 rayon plant at Huntsville, Ala.

Dan River Mills, Inc., Danville, Va., has purchased the Filament Weaving Mill of Aberfoyle, Inc., Norfolk, Va. Arrangements for purchase are being handled by Watson & Desmond, Charlotte, N. C. The Aberfoyle plant will be operated as the Norfolk division of Dan River Mills Inc. The plant will continue to specialize in synthetic fabrics.

Dobeckmum Co., Cleveland, Ohio, has announced plans for expansion of its mill in Bennington, Vt.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has set up separate groups to handle manufacturing activities and sales of acetate rayon and Orlon acrylic fiber in the firm's acetate division. Du Pont is also planning a $1,914,000 improvement program at its Yerkes Works, Buffalo, N. Y., which calls for modernization of Cordura viscose rayon yarn plant to secure added output. The Cordura unit has been operating at capacity for some time and demand is exceeding that capacity.

Martin Fabrics Co., Emporia, Va., has been given permission by NPA to build a weaving mill at a cost of $315,000.

Owens-Corning Fiberglas Corp., Anderson, S. C., plant is now in partial production. It will be early 1952 before the entire plant is completed and in operation. Specially

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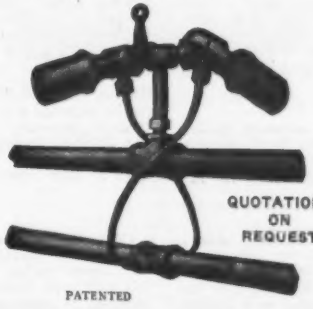

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News About MILLS (Continued)

trained men have arrived from the firm's plants at Newark, Ohio; Ashton, R. I.; and Huntington, Pa., to take up supervisory duties.

Robbins Mills, Robbins, N. C., is experimenting with use of an Italian-made worsted comber in processing rayon and has a pilot unit in operation in its plant at Aberdeen, N. C. It is planning to install Pacific converters in the new rayon-spinning and -weaving mill now under construction at Raeford, N. C.

Schneider Silk Mills, Inc., Taylorsville, N. C., has work progressing on a 30,000-sq.ft. addition. The added space will include room for 120 additional looms, new quilling and yarn-conditioning rooms, and an additional 7,000-sq.ft. storage space in the basement of the mill.

Textron, Inc., Providence, R. I., is reported to have selected Monroe County, Miss., as site for a $3,000,000 textile mill. The plant will make denim and will be located at Ackers, Miss., if present plans eventuate. It is understood that this plant and another in the Delta section will be operated by Textron-Mississippi, Inc.

Textron Southern, Inc., mill located at Charlotte, N. C., has been purchased by Vanderbilt University, Nashville, Tenn., for $2,700,000. The sale included land, buildings, and machinery. The university made the purchase as an investment and has leased property to Textron for 11 years with renewal options. The sale will have no effect on operations at the mill.

Toyo Rayon Co. Ltd., Tokyo, Japan, has been licensed to manufacture nylon under patents of E. I. du Pont de Nemours & Co., Inc. The agreement has been approved by the Japanese government and by the Supreme Commander of Allied Powers.

Martin Weiner Co., New York, N. Y., is reported considering an area near Hamlet, N. C., as site for new textile plant.

Weldon Mills, Inc., has nearly completed moving of machinery from Pawtucket, R. I., to a new plant for filament-rayon weaving at Emporia, Va. About 200 of 300 looms at its Pawtucket plant are being moved to Virginia and 200 new looms are being added. The new plant is adjacent to the Weldon dyehouse, which the company constructed at Emporia several years ago.

Knitting Mills

A. Q. Mills, Timmonsville, S. C., recently opened a $250,000 addition to its plant. Air conditioning was installed throughout plant by Buensod-Stacey, Charlotte, N. C. The firm will add 32 tricot knitting machines, making an over-all total of 72.

C. W. Anderson Hosiery Co., Clinton, S. C., plans to increase its production capacity by 25% within the next few months.

Berkshire Knitting Mills is constructing a $3,000,000 plant at Andrews, N. C. Berkshire has also bought a controlling interest in a knitting plant at Newtonwards, County Down, Armagh, Northern Ireland. The plant will be re-equipped and will expand its production of hosiery and other nylon products.

Burlington Mills, Graham, N. C., plans construction of a warehouse addition to its Grabur hosiery plant. The 8,000-sq.ft. structure will be constructed of concrete, steel, and masonry and is expected to be completed within six months. The addition will take care of increased production of Grabur's throwing operations and eliminate hauling that results from use of warehouse space at other locations.

Carter Fabrics Operating Division of J. P. Stevens & Co., Inc., South Boston, Va., has had work going forward on installation of additional tricot-knitting machinery at its South Boston unit in order to double plant's productive machinery. The plant formerly had 12 high-speed warp-knitting machines.

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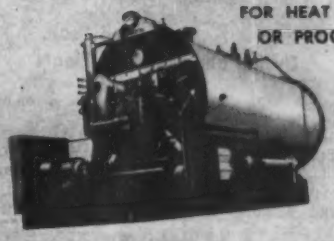

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News About MILLS

(Continued)

Commonwealth Hosiery Sales Corp., Randelman, N. C., was recently incorporated with authorized capital of $100,000 by E. W. Freeze, Jr., of Randelman; Baxter Freeze, of High Point; and W. D. Freeze of Greensboro. Mill will operate 820 circular knitting machines, producing women's seamless and misses' hosiery.

Fairview Mills, Fountain Inn, S. C., has deeded ownership of its property to Continental Assurance Co. for $1,500,000. Transfer of title included 32 acres at mill site and less than 2 acres in another tract. Transfer also included certain rights-of-way. The mill is now operating at 20% of total production, with a capacity load expected to be handled within four months. Shipment and installation of 168-in. tricot knitting machines is proceeding.

Herbert Knitting Co., Woonsocket, R. I., has been chartered to operate a knitting plant, with Doris Decelle, Richard A. Baldwin, and Mary M. Degagne, Woonsocket, as incorporators.

Julius Kayser & Co., Newport News, Va., is planning to consolidate hosiery equipment now in its plant at nearby Hilton Village with its hosiery operations at other locations.

Powell Knitting Co. is moving its headquarters from Philadelphia, Pa., to Spartanburg, S. C. The move will include transfer of main office facilities, key personnel, and most production equipment from the Philadelphia plant. About 100 hosiery knitting machines are being transferred to Spartanburg to replace old equipment.

Reamstown Hosiery Mills, Inc., Reamstown, Pa., has arranged an increase in capitalization from $75,000 to $350,000.

Richmond Hosiery Mills, Rossville, Ga., is adding 27 knitting machines and eight loopers to its production facilities.

Sharnay Hosiery Mills, Philadelphia, Pa., has completed an expansion program, which includes addition of floor space to existing mills owned by the company and addition of a number of new 51-gauge and 60-gauge full-fashioned knitting machines.

Vaughan Corp., subsidiary of Vaughan Knitting Co., Pottstown, Pa., has started installation of equipment in a new building recently completed near Spruce Pine, N. C. The new plant will employ about 150 workers.

Dyeing and Finishing Plants

Burlington Mills Corp., Greensboro, N. C., has purchased plant and property of Worth Bros., Inc., Los Angeles, Calif., to expand its present piece-goods and hosiery dyeing and finishing operations. The plant will be modernized with latest equipment for dyeing and finishing hosiery and rayon fabrics.

Cranston Print Works, Cranston, R. I., is conducting experiments with fluorescent printing inks on its roller-printing machines.

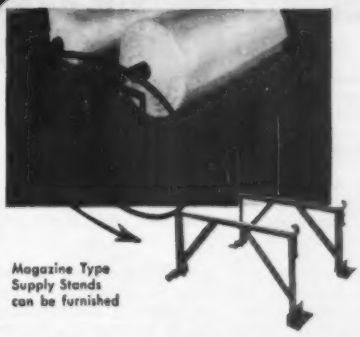
Crompton-Shenandoah Co., Waynesboro, Va., is exercising its option on a textile mill site near Osceola, Ark., but actual construction may be delayed due to shortage of materials. The company plans to erect a $4,000,000 plant on site as soon as conditions permit.

Fairforest Co., Spartanburg, S. C., has let a general contract to Cecil's, Inc., Spartanburg, at $148,310 for a one-story addition to its bleach house.

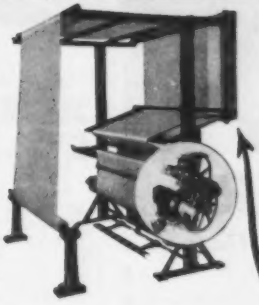
Hickory Yarn & Processing Co., Inc., is now operating in the former Knit-Sox Knitting Mill finishing plant, West Hickory, N. C., which the company purchased recently.

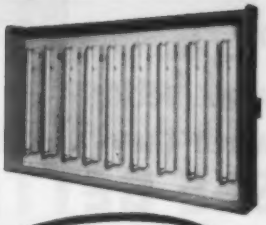
United Piece Dye Works, Lodi, N. J., is making good progress with its new plant at Hanahan, S. C., and manufacturing operations are expected to begin early this fall. Initial employment of about 75 persons will eventually be increased to 200.

"Standard" CLOTH INSPECTING, MEASURING AND WINDING MACHINES



Magazine Type Supply Stands can be furnished





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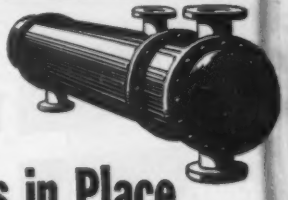

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NEWS ABOUT *Men*

Arthur Almstedt has been named chairman of the board of directors of Louisville Textiles, Inc., Louisville, Ky. He succeeds **William S. Speed.**

Gordon O. Andrews, manager of the personnel division of the service department of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has been appointed assistant director of the department. He succeeds **F. S. Johnston,** who has been assigned to special work.

John E. Bell has been added to the executive staff of Stonecutter Mills, Spindale, N. C., as assistant to the president. Mr. Bell has, for the past fifteen years, been connected with Carter Fabrics and J. P. Stevens Company as director of manufacturing control of Carter Operating Div.

C. Willard Bigelow, who has been secretary-treasurer of the Boston Wool Trade Assn. for the past 15 years, will retire from that office on Sept. 30. He is also a partner in the wool firm of Bigelow & Gifford, Boston.

Roy Bobo, assistant superintendent of the Lexington rayon plant of Burlington Mills Corp., Lexington, N. C., for the past three years, has been promoted to assistant superintendent of the company's High Point weaving plant, High Point, N. C. Succeeding Mr. Bobo at Lexington is Frank Barnes, who has been with the company filament division at Bristol, Tenn.

Chester Boyce has joined American Silk Spinning Co., Providence, R. I. Mr. Boyce has been general manager of "B" mill of Goodall-Sanford, Inc., Sanford, Me.

E. W. Carter, Jr., formerly assistant credit manager of American Enka Corp., Enka, N. C., has been named supervisor of the receipts and disbursements section. **Charles E. Bishop** has been named assistant credit manager in charge of the new credit and collection section. Mr. Carter also will supervise receipt and disbursement functions at the Lowland, Tenn., plant and New York office of the company.

Archie Chevrette has become superintendent of dyeing, bleaching, and finishing at Brown Knitting Co., Warsaw, N. Y., succeeding **E. A. Chevrette,** resigned.

Merritt A. Cline has been appointed director of general purchasing at Alexander Smith, Inc., Yonkers, N. Y. **Joseph A. Tuly** has been appointed director of fiber purchasing. **Henry Fischer, Jr.,** has been named general purchasing agent and **Horace Pitches** fiber purchasing agent.

John A. Coleman has been elected a director of American Woolen Co., New York, N. Y., succeeding the late A. H. Wiggin.

G. W. Earl Delahunt is now in charge of weaving, slashing, and drawing-in for Crown Mfg. Co., Attleboro, Mass.

Owen C. Divan has been appointed service manager of the new Fiberglas-yarn plant of Owens-Corning Fiberglas Corp., Anderson, S. C.

P. L. Doonan has become assistant superintendent at Arms Textile Mfg. Co., Inc., Manchester, N. H.

John T. Drennen has become superintendent for S. Stroock & Co., Inc., Newburgh, N. Y., succeeding **Walter A. Qualman, Jr.,** who is now with Peerless Woolen Mills, Cleveland, Tenn.

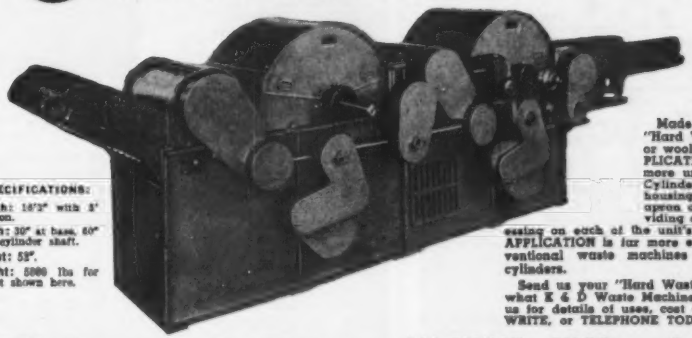
H. W. Dugan is general manager in charge of new White Horse plant of Maverick Mills, which is now starting operations on a limited scale at Greenville, S. C.

F. W. Dunn, timestudy engineer in the industrial-engineering department of Cela-

You can now whip your "HARD WASTE" problem—with the

LEFT above is hard twist unsized cotton warp waste. RIGHT—the processed waste after one time through K & D Tandem Unit. Many mills, pleased with such results from first installation, have ordered additional units.

K & D TANDEM APPLICATION WASTE MACHINE



SPECIFICATIONS:
Length: 187⅜" with 3' apron.
Width: 30" at base, 60" at cylinder shaft.
Height: 53".
Weight: 5000 lbs for unit shown here.

Made for processing unsized "Hard Waste" in cotton, rayon, or wool, this new TANDEM APPLICATION combines two or more units of the K & D Single Cylinder Waste Machine in one housing, with only one feed apron and one exit apron. Providing double-action waste processing on each of the unit's cylinders, the TANDEM APPLICATION is far more efficient than bulky, conventional waste machines with twice as many cylinders.

Send us your "Hard Waste" samples for proof of what K & D Waste Machines can do for you. Ask us for details of uses, cost and installation. WIRE, WRITE, or TELEPHONE TODAY, to

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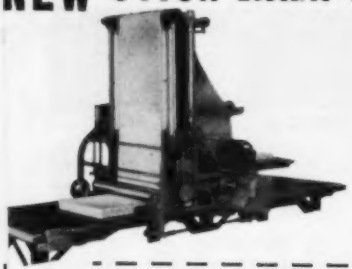

Lay Up Machine for Tubular Knitted Fabrics

This new, simple-to-operate machine is the answer to your need for fast, efficient, constant laying up. Check these important advantages:

- VERSATILE—Handles cloth from rolls or folds . . . any weight fabric. No limit to length it will lay up . . . depends only on amount of track you buy. Made to pile cloth up to 7" and special to 10".
- QUICK INSPECTION—Improved fluorescent inspection light helps operator to see imperfections quickly . . . holes can be turned out easily.
- EVEN EDGES AND ENDS—Cloth is centered up perfectly on edges as spreader is inside cloth just above rolls that feed it on table naturally and tension-free . . . assures uniform length of garments . . . eliminates racking.
- FAST OPERATION—Push button control . . . automatically reverses at each end of lay . . . folds ends over evenly. Feed rolls automatically raise as cloth is laid up on table . . . machine is equipped with counter.
- RIGIDLY BUILT—Equipped with ball bearings and frictionless bearings throughout all moving parts. This drive can be installed on any Utica Hand Laying Up machine.

For further information about this new, fast-producing machine, write today.

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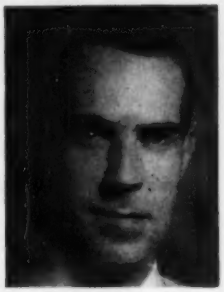
News About MEN

(Continued)



VAN ANDREWS (left), has been made manager of all U. S. branch offices of Riegel Textile Corp., New York, N. Y. Starting with Riegel 19 years ago as a glove salesman, Mr. Andrews became manager of the Dallas, Tex., office in 1944, and assistant manager of fabricating sales in 1951. CHARLES H. EDMONSTON (right), former manager of sales control and marketing research, will succeed Mr. Andrews.

nese Corp. of America, Rome, Ga., since 1935, has been promoted to plant industrial engineer, succeeding W. A. Jecusco, resigned.

Richard F. Eshelman has resigned as head of knitting development for American Viscose Corp., Marcus Hook, Pa.

Grady Faulkenberry has been appointed superintendent of the new dye plant at Republic Cotton Mills, Great Falls, S. C., a division of J. P. Stevens & Co., Inc.

J. V. Feenstra has resigned as overseer of finishing at Baltic Mills of American Woolen Co., Enfield, N. H., and has accepted a similar position with Northfield Mills, Northfield, Vt. **Harry Brown** has been promoted to succeed Mr. Feenstra.

Duncan Ferguson, vice president in charge of manufacturing of Sidney Blumenthal & Co., Inc., and manager of the company's plant at Shelton, Conn., has been named vice president and technical consultant with headquarters at New York. **Earl Jacobson**, head of the design department, has come to New York as Mr. Ferguson's assistant. **T. M. Shock** has become manager at Shelton. He also will manage the company plant at Uncasville, Conn.

Alester G. Furman, Jr., a partner in the firm of Alester G. Furman Co., Greenville, S. C., was elected to the board of directors of Utica & Mohawk Cotton Mills, Inc., New York, N. Y., and Utica Willowvale Bleaching Co., Chadwick, N. Y. **Earl Liberty**, treasurer of both companies, has been elected vice president; and **Howard O. Chapman**, assistant treasurer of the companies and formerly manager of the Seneca Div., has been appointed general manager of the mills.

W. T. Galey, Jr., formerly president of Aberfoyle Mfg. Co., Philadelphia, Pa., has been elected to the newly created office of chairman of the board. **Joseph P. Holtis** is the new president of the company. Mr. Galey has been associated with the company founded by his father since 1903, and president since 1939. Mr. Holt has been vice president and treasurer since 1936, and has been with Aberfoyle since 1912.

Richard G. H. Knight, Jr., has become assistant superintendent at Dana Warp Mills, Westbrook, Me.

George R. Krause has resigned as overseer of finishing for Wyandotte Worsted Co., Waterville, Maine, and has been succeeded by **R. Krueger. Verne Violette** has become overseer of carding and **William E. Herrick** has become night superintendent.

J. A. LeConte, Jr., has become head of the interlining department of Kendall Mills, Walpole, Mass., succeeding **Gene Jacobson**, who has resigned. Mr. LeConte has been

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Herringbone
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WATER • WASTE DISPOSAL • APPRAISALS • PLANS • REPORTS

News About MEN

(Continued)

with Kendall Mills for about ten years.

Edmund S. Lewis, Jr., has been appointed head of the New York office of Bourne Mills, Fall River, Mass., succeeding the late Frank J. McMurray.

Marvin P. Long has been promoted to head of the new Filatex Div. at American Viscose Corp., Roanoke, Va. The new department manufactures covered rubber thread.

O. A. Mace, former superintendent of Eureka plant of Springs Cotton Mills, Chester, S. C., who resigned this position to go to Canada to superintend operations of several cotton mills, has returned and accepted the position of general superintendent of two new mills that Arkwright Mill, Spartanburg, S. C., has opened at Croft, S. C.

W. S. Nicholson, treasurer of Darlington Mfg. Co., Darlington, S. C., has retired. He will remain as consultant for a period of time. **James M. Oeland**, formerly with Monarch Mills, Union, S. C., has succeeded Mr. Nicholson.

J. Donald O'Hara has been elected a vice president of Cannon Mills, Inc., Kannapolis, N. C. Since 1949, Mr. O'Hara has been sales manager of the Cannon gray-goods department under general supervision of **H. G. Mortland**, vice president. Hereafter, Mr. Mortland and Mr. O'Hara will divide the responsibilities of the department.

Samuel R. Phillips has been promoted to general manager of the textile division of U. S. Rubber Co., Scottsville, Va. **Staton J. Peele, Jr.**, has succeeded Mr. Phillips as manager of sales and production co-ordination.

Brian Plunket, who has been general superintendent of Celanese Corp. of America knitted fabrics division, with headquarters in Harrisonburg, Va., has resigned to become manager of fabric production at the Jackson, Ala., plant of Vanity Fair Mills, Inc.

Lester Redding has been appointed superintendent and designer at George Mabbett & Sons Co., Plymouth, Mass.

EBEN E. WHITMAN has been elected vice president in charge of sales and a member of the board of directors of Kroy, Inc., Lowell, Mass. Mr. Whitman was formerly associated with Burlington Mills, Greensboro, N. C., as administrative manager of the Men's Wear Div. He joined Kroy last November as assistant to the president.

Albert E. Snyder has been Mr. Redding was formerly with Lorraine Mfg. Co., Pawtucket, R. I.

Kenneth G. Schneider, southern representative for Utica Knitting Co., Anniston, Ala., for the past 23 years, has become associated with Russell Mfg. Co., Alexander City, Ala., and will be in charge of the company's Nashville, Tenn., office.

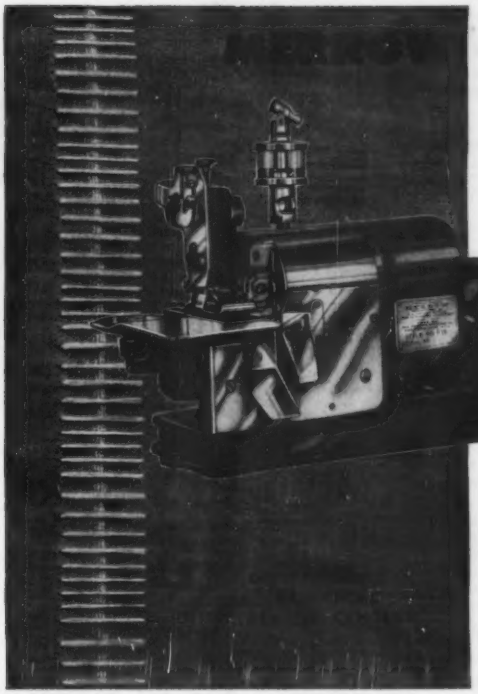
James Scribner has resigned *from the yarn research laboratory* of Limerick Yarn Mills, Manchester, N. H., to become production manager of Hitchner Mfg. Co., Inc., Manchester, N. H.

Albert E. Snyder has been promoted to staff engineer with American Viscose Corp., Roanoke, Va.

John A. Staples has become assistant treasurer of Parkdale Mill, Gastonia, N. C. He was formerly group manager of Burlington Mills Corp. spun rayon mills in the Gastonia area.

J. B. Templeton, superintendent of Poinsett Mills, Greenville, S. C., has been named superintendent of Lydia Cotton Mills, Clinton, S. C., to succeed Walter Danhoff.

T. C. Terry has resigned as overseer of weaving at Indianapolis Bleaching Co., Indian-



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for finishing

For process finishing the Merrow overstitch has been termed the "Butted Seam". When opened flat by the tension of processing, it permits the joined pieces to assume an end-to-end relation. With little more bulk than the material alone, the seam passes through finishing operations such as shearing, napping, printing, coating, etc. with minimum waste of cloth or damage to rolls or bearings.

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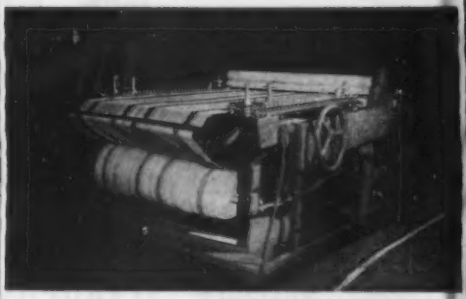

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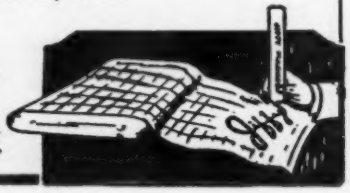

News About MEN (Continued)

apolis, Ind., and has been succeeded by L. D. Grady, former second hand.

John Thompson, agent of Winthrop Mills, Winthrop, Me., has resigned. **John H. Anderson** has succeeded Mr. Thompson.

Charles Treuer has resigned as overseer of finishing, second shift, at Lymansville Co., Lymansville, R. I., to accept a position as day overseer with Puritan Mills of American Woolen Co., Inc., Plymouth, Mass.

William W. Via has been promoted to assistant foreman in the electrical division of American Viscose Corp., Roanoke, Va.

Stephen A. Ward has been appointed assistant plant manager of United States Rubber Co., Gastonia, N. C., combed yarn mill. He was transferred from U. S. Rubber Co., rayon tire-cord mill, in Scottsville, Va.

John C. Williams has been promoted to overseer of spinning at Globe Mills of American Woolen Co., Utica, N. Y., succeeding the late George Swallow.

Howard Wilson has become overseer of dyeing at Woonsocket Dyeing Co., Inc., Woonsocket, R. I., succeeding F. Rotatori.

Everett Wood, former overseer of dyeing for United Wool Piece Dye & Finishing Co., Passaic, N. J., has accepted a similar position with Manville Dyeing & Finishing Co., Manville, R. I.

GERALD LAXER, assistant development and research chemist in the Carpet Div. of Alexander Smith, Inc., Yonkers, N. Y., has been awarded the first Wool Bureau fellowship for study in England, as a candidate for a Ph. D. degree at Leeds University. The Anglo-American fellowship, granted on the basis of the applicant's interest in wool research and his academic and professional background, is the first of a series projected by the bureau in cooperation with the International Wool Secretariat.

Earl Woodward has become overseer of weaving, second shift, for Guild-Northland Mills, Inc., Laconia, N. H.

B. William Wyskoczka has become overseer of worsted drawing at Sheble & Wood Yarn Corp., Salamanca, N. Y.

OBITUARY

Henry B. Barnet, 71, president of Albany Woolen Mills and William Barnet & Son, Inc., Rensselaer, N. Y., died recently.

Andrew M. Gillespie, 65, former operator of Rhode Island Processing Co., Coventry, R. I., died recently.

Arthur M. Kerr, 57, owner of Broadnax Mills, Broadnax, Va., and a partner in James H. Kerr & Sons, Philadelphia, Pa., died recently. Until his retirement in 1947, he was vice president and a director of Reeves Bros., New York, N. Y., and continued as a director until his death. He was also vice president and a director of Grace Cotton Mills and Thurston Cutting Corp., and a director of Warrior Duck Mill and Fairforest Finishing Co.

Arthur E. Moreau, 65, president of Amoskeag Industries, Inc., Manchester, N. H., died recently.

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to FINE UNDERWEAR MATERIALS . . .

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SINGLE HEAD SPRING NEEDLE KNITTING MACHINE

Here is the finest in circular high speed spring needle knitting machines—with an extreme flexibility and a wide range of capabilities for producing different types and sizes of fabrics! It is a smooth, steady, high-speed production unit capable of turning out approximately 100 yards of overcoating materials per 8 hour day, using six feeds.

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Equipped with electric stop motion, visual stop indicator, adjustable furnishing wheels, lighting in cylinder, evenly tensioned take-up, variable speed motor drive.

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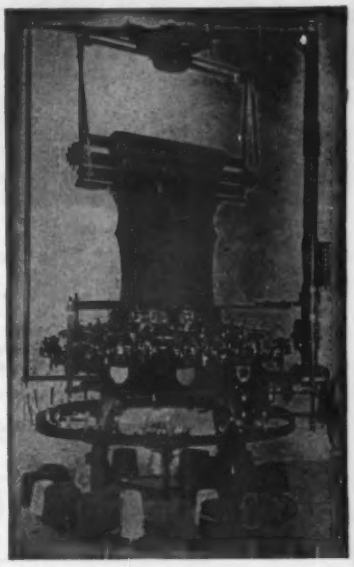

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Full Fashioned, Tricot and Milanese Knitting Frames also Narrowing, Stand Transfer and Welt Hooks for Full Fashioned Machines. Sinkers, Jacks, Guides or Flat Eye Spring Steel Points, Transfer Points, or Quill

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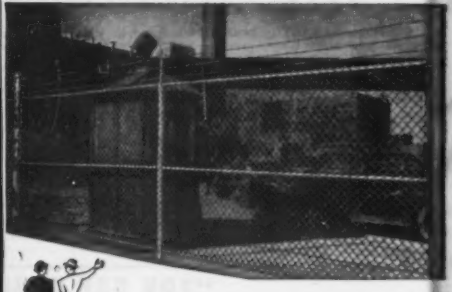

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From PRECISION only—exclusive formula, NON-SLOUGHING Cams (standard or special) for spinning and twisting—at no EXTRA COST—providing amazing, up-to-4 way, yarn control. Get "jewelled movement" ring rail reversing, longer lived accuracy—no sloppy backlash, due to Cams. Build firmer, longer running, higher speed bobbins. Cut your time and costs. No other cams are made with this mathematical accuracy. Write for our Cam Computation Chart and full information, now!

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USE F & E SOLUTION around toilets and urinals . . . for flushing garbage receptacles and sick room accessories . . . for dressing room benches and lockers . . . wherever agreeable, high-speed deodorization is required.

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CHARLOTTE, N. C.

Dr. Arthur Mothwurf, first president of the former American Glanzstoff Corp., now North American Rayon Corp. and American Bemberg Corp., subsidiaries of Beaunit Mills, Elizabethton, Tenn., died recently.

Frank J. O'Neil, president of Lowell Shuttle Co., Lowell, Mass., died recently.

Martin R. Porter, 64, chairman of the board of New Braunfels Textile Mills, Inc., New Braunfels, Texas, and associated with Iselin-Jefferson Co., Inc., New York, N. Y., died recently.

Fred G. Barnes, vice president of Bibb Mfg. Co., Macon, Ga., died recently.

Charles H. Cresswell, 80, retired vice president of Scranton Lace Co. of N. Y., Kingston, N. Y., died recently. He was an expert on lace finishing.

John J. Hosey, Jr., vice president and treasurer of Energetic Worsted Corp., Bridgeport, Pa., was killed in a plane crash recently.

William C. Johnson, executive vice president of Allis-Chalmers Mfg. Co., died recently. He was a member of the firm's board of directors and also a member of the executive committee of the board.

Charles F. Kiely, 68, vice president of Forstmann Woolen Co., Passaic, N. J., until his retirement three years ago, died recently.

W. C. Sykes, 73, retired vice president and general manager of Statesville Cotton Mills, Statesville, N. C., died recently. He joined the company in 1920.

Ross W. Baker, 75, treasurer of Lawrence Mfg. Co., Lowell, Mass., died recently.

Allan Barrows, 60, treasurer and a director of Gosnold Mills Corp., New Bedford, Mass., since 1927, died recently.

William B. Eddy, 64, manager of the Philadelphia, Pa., office of William Carter Co., Needham Heights, Mass., died recently. He had been associated with the co. any since 1910.

Frank J. Haughey, 39, New York sales representative for Chadbourn Hosiery Mills, Charlotte, N. C., died recently.

William T. Joyce, former general manager of United States Finishing Co., Norwich, Conn., died recently.

Frank J. McMurray, 52, head of the New York office of Bourne Mills, Inc., Fall River, Mass., died recently. He had been with the company in this capacity for the past six years.

John H. Rice, treasurer of Leighton Machine Co., Manchester, N. H., died recently.

Joseph W. Roberts, 58, assistant comptroller of Goodyear Tire & Rubber Co., died recently.

Alfred Wilkinson, 68, former general manager of Southbridge Finishing Co., Southbridge, Mass., died recently. He became manager of the company 12 years ago and retired in 1950.

C. E. Wirsching, former Eastern sales manager for Claussner Hosiery Co., Paducah, Ky., died recently.

Fred C. Zillman, 60, Mid-West divisional sales manager for Phoenix Hosiery Co., Milwaukee, Wis., died recently.

Arson P. Herman, 44, supervisor of Allred Mill plant of Shuford Mill, Granite Falls, N. C., died recently.

Frank H. Hogg, 63, superintendent of the wool and yarn department at Bigelow-Sanford Carpet Co., Inc., Amsterdam, N. Y., died recently. He had been with the company since 1904.

Charles E. Clark, 39, a foreman at Blackstone Weaving Co., Blackstone, Va., died recently.

William T. Garner, 83, retired foreman at Consolidated Textile Corp., Lynchburg, Va., died recently.

Alf Greenfield, 64, a finisher at Pacific Mills, Lawrence, Mass., died recently. He was formerly overseer of finishing at the American Woolen Co. Shawsheen Mill, Andover, Mass.

Clifford E. Pinney, 63, former foreman at American Vicose Corp. plant at Fredericksburg, Va., died recently.

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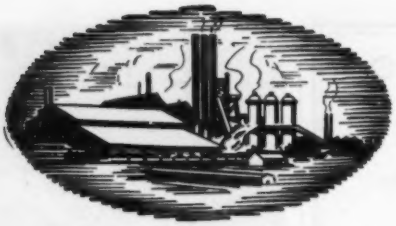
WORCESTER, MASS. CHARLOTTE, N. C.

Sales Engineers in the South:

Charles E. Hendrick—L. P. Bell—B. L. Quick

Office and plant, 1623 North Tryon Street, Route 29, Charlotte, N. C.—Tel. 5-3845



1900 ★ THE MIRACLE OF AMERICA ★ 1950

Freedom and Progress

It's no stretch of the imagination, rather, robust realism to call our past half century a Miracle—U.S.A.

America has set an amazing record of progress in 50 years—but a moment in the history of civilization. A record unequalled by any other political or economic system.

Merely by broad brush strokes, we can all visualize this miracle. Remember the crystal set, the hand-cranked car, the biplane? A far cry from our FM radio, television, hydro-matic drive and supersonic planes.

And here's another phase of the miracle that went hand-in-hand with these and the myriad of intertwined technological advances—ranging from the radio telephone and Bakelite to the X-ray tube and teletype . . . and to atomic energy and its untold potentialities.

★ Since 1900 we have increased our supply of machine power 4½ times.

★ Since 1900 we have more than doubled the output each of us produces for every hour we work.

★ Since 1900 we have increased our annual income from less than $2400 per household to about $4000 (in dollars of the same purchasing power), yet . . .

★ Since 1900 we have cut 18 hours from our average work week—equivalent to two present average workdays.

How did we do it? The basic cause for this composite miracle has been the release of human energy through FREEDOM, COMPETITION and OPPORTUNITY. And one of the most important results is the fact that more people are able to enjoy the products of this free energy than in any other system the world has ever known.

THIS IS THE MIRACLE OF AMERICA . . . it's only beginning to unfold.

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MEN WANTED

POSITIONS OPEN

We can place: Plant MANAGER hand screen printing plant (South); staple spun rayon mill supt; supt. filament rayon mill; corduroy converter or converter and salesman combined; asst. supt. woven label plant woolen-worsted designer (N. Y. City); asst. supt. small combed cotton yarn mill; designer woolen and worsted women's wear fabrics; cotton yarn supt.

OVERSEERS FOLLOWING DEPTS: worsted spinning and cone drawing; slashing, warping and winding; silk-rayon winding and quilling; woolen carding, $100-$110 wk.; Wildman underwear machines, excellent salary; jig dyeing and finishing combined; cutting and pattern making knitted outerwear; dyeing cotton tubular fabrics; cotton piece goods dyeing and finishing, (foreign); cotton weaving, plain Draper looms for United States and foreign countries; cotton-rayon spinning; ribbon dyeing.

SECOND HANDS FOLLOWING DEPTS: cotton picking, carding, combing and spinning combined; woolen carding; cotton ring spinning; napping and shearing; woolen frame spinning.

MACHINE DESIGNERS and draftsmen; power plant executive engineer; watch engineer B.S. degree in Mech. Eng.; textile school graduates with or without practical mill experience; salesmen for dyestuffs, chemicals and machy.; junior chemists; industrial engineers; textile engineer to sell textile products; head sewing machine mechanic; fixer Komet, Links and Links and Bentley machines, $80-$100 wk.; automatic loom fixers; sewing machine fixers; time study engineers.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the textile mills.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St. Boston, Mass.

WANTED

TECHNICIAN

By Leading Old-Established Silk and Rayon Manufacturers. Must be thoroughly experienced Technician used to styling of fashion fabrics.

State background, technical training and experience.

Opportunity for interesting position.

P-1640, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

FOREMAN

- TO TAKE FULL CHARGE OF SIMPLEX MACHINES.
- STEADY POSITION.
- STATE EXPERIENCE.
- FACTORY LOCATED CENTRAL PART OF NEW YORK STATE.

P-1720, Textile World
330 W. 42 St., New York 18, N. Y.

DESIGNER DRAFTSMAN

Textile Finishing equipment manufacturer has opening for experienced draftsman capable of designing and detailing equipment from engineering layout. Excellent opportunity with growing New England organization to take over supervision of drafting department.

P-1748, Textile World
330 West 42nd Street, New York, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
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MILL SUPERINTENDENT WANTED

Expert in Garnetting, Carding, Combing and Spinning of Synthetic Wastes and Staple Fibres

NEW ENGLAND LOCATION TOP SALARY

Write for full particulars to

P 1586 Textile World
330 West 42nd St., New York, New York

MANAGER WANTED
for a Velvet Weaving Mill

Must be experienced on Pile Fabric materials. Call or write to

VELVET TEXTILE CORPORATION
16 Gilbert Street West Haven, Conn.
Phone number West 3-3521

ENGINEER
Textile Finishing Equipment Background. Expanding New England machinery builder and fabricating plant has opening for a progressive engineer to originate equipment designs to suit industry requirements. Ability to engineer and supervise projects from design stage to completed installation essential. Knowledge of production costs desirable. Permanent position. Salary open.

P-1749, Textile World
330 West 42nd Street, New York, N. Y.

POSITIONS VACANT

COLLEGE GRADUATE, age 28-35, for position as Wage Administrator. Experienced in Labor Relations, Incentive Methods, Time Study Procedures, and Job Evaluation Methods. Duties include surveys, wage-rate controls, job descriptions and related responsibilities. P-1530, Textile World.

WEAVING SUPERINTENDENT Wanted, interested in six to twelve months' position in South America to introduce warp preparation and filament rayon and spun rayon construction. Must be able to select and introduce rayon fabrics consistent with equipment available in local mills. Salary $1,000 per month. P-1247, Textile World.

DYER-FINISHER Wanted, interested in six to twelve months' position in South America to introduce latest dyeing, finishing, and crease-resistant techniques for spun rayon fabrics. Salary $1,000 per month. P-1246, Textile World.

WEAVING FOREMAN wanted, for large mill in Virginia. Please state experience and give references. Apply P-1730, Textile World.

OPENING FOR an experienced Head Examiner of Finished Dress and Underwear Goods for plant located in North Carolina. In replying, state your age, experience and expected salary to begin with. Reply P-1759, Textile World.

SELLING OPPORTUNITY OFFERED

SALES ENGINEER Wanted: Intimate knowledge of textile machinery manufacture interest in future with young, progressive organization contemplating adding other lines. Write giving experience and salary desired. SW-1775, Textile World.

WOOLEN MACHINERY & EQUIPMENT

TUESDAY
SEPTEMBER 25, 1951
STARTING AT
10:00 AM

ARCADIA WOOLEN MILLS
successors to: ATLANTA WOOLEN MILLS, INC.

598 WELLS ST., S.W. **ATLANTA, GEORGIA**

ALL MACHINES PURCHASED FROM 1943 ON

SALE INCLUDES:

56 Crompton & Knowles W3 Automatic Looms; 42 Crompton & Knowles 89" Model W3 Automatic Woolen Looms M.D.; 12 Crompton & Knowles 92" Model W3 Automatic Woolen Looms M.D.; 6 Crompton & Knowles 78" Model W2 Automatic Woolen Looms M.D.; Whitin Model E Wool Spinning Frames; 2 Whitin Model E 120 Spindle 6 ½" Ga. 5" Ring Wool Spinning Frames M.D. 1943; 7 J & B 288 Spindle 3" Ga. Giant Package Mules; 10 Sets 60 x 48" dia. All Iron Woolen Cards—with Broadband Int Feeds and Tape Condensers; J. Hunter Complete Cloth Curbonizing Range for 78" cloth—complete with Leeds-Northrop Air Control System All Motor Driven 1945; 2 R & L Model 66 Fulling Mills 1946; Kenyon 96" x 8 Pass Return Type Tenter Cloth Dryer; Woonsocket 90" x 36 Roll D.A. Ball Bearing Napper 1944; P & W 72 x 36 Semi Decater 1945; David Gessner 72" Model PD High Speed Rotary Cloth Press 1943; Sargent 60" x 8 Bar Mixing Picker 1946; Kitson 2 cyl. Model W3 Hard Waste Picker; Morton 600 to 750# Stainless Steel Raw Stock Dye Kettle 1946; Morton 1000# Special Alloy Raw Stock Dye Kettle 1943; J. Windle 68 ½" open width Cloth Measuring and Rolling Machine; R. Hunt 4 String Dry Fulling Mill 40 HP—M.D.; Small Stainless Steel Piece Dye Kettle M.D. 1950; Hundreds of other items usually found in a large completely equipped Modern Woolen Mill; Complete Office; Machine Shop; Humidification System.

TO BE SOLD PIECE BY PIECE. INSPECTION 2 WEEKS PRIOR TO SALE

ALL SALES FINAL.

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Edward Kreck Industries, Inc.

2 FOSTER STREET WORCESTER 8, MASS. TEL 7-3857

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SAN FRANCISCO: 68 Post St. (4)

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COLOR-MIXER experienced in the whole Screen Printing field, desires interesting position. PW-1712, Textile World.

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THROWSTER WITH more than thirty years experience in all branches, silk, nylon & synthetic yarns for weaving, hosiery, combinations and thread trades is open for position as Supt. or Manager. Thoroughly competent of assuming full charge. PW-1398, Textile World.

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DESIGNER SAMPLE Maker, experienced on Raschel lace and outerwear fabrics, desires steady position. PW-1745, Textile World.

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WANTED TO Weaving trade line or item, New England territory, excellent following, textile school graduate, systematic coverages. Now carrying reeds. P. O. Box 384, Woonsocket, R. I.

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CONSULT: Z. H. POLACHEK.
Reg. Patent Attorney, 1234 Broadway, New York 1, N. Y.

WANTED SALESMAN

to cover the Southern territory to solicit business for the textile and allied industries. Preferably man with experience and following, but not necessary.

SW-1608, Textile World
330 W. 42 St., New York 18, N. Y.

TEXTILE PLANT WANTED: We are now manufacturing over $20,000,000 in various lines and wish to expand by acquisition of assets or stock of one or more industrial companies. In our negotiations the sellers' problems and wishes will receive full consideration. Present personnel will normally be retained.

Address all replies
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Glycols—Cellosolves—Ethanolamines
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CHEMICAL SERVICE CORP.
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DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.
Established 1919

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Surplus Textile Equipment of all Types

STANDARD MILL SUPPLY
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P-1752, Textile World
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McKOY-HELGERSON CO.
Industrial Construction
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100 C & K S-3 Automatic Looms

52" LOOMS—2 x 1—20 HARNESS—LARGE SHUTTLE BOXES

Individually motorized—23" & 24" flange beams—Payne let-offs—in excellent condition—located in South.

COMPLETE NARROW FABRIC PLANT FOR SALE

Liquidating In Piecemeal

16 FLETCHER STANDARD 15' 18" LOOMS

Side jacks, loose and tight pulley drive, 70 to 100 space battens, weights, top castles, harness equipment.

Blocking Equipment-Winding Equipment-Warping Equipment

6 ACME D. DECK TWISTERS

All individually motorized, 4¼" spindle spacing—Bobbin equipment with machines in excellent condition. ½ lb. package.

2000 TRICOT BEAMS

Steel Beams—13¾" Head—13" Traverse—2¾" Bore —9/16" & ¼" Keyway.

37 ATWOOD *STANDARD-MOTORIZED DOUBLE-DECK* **TWISTERS**

20—192 Spindles • 14—228 Spindles • 3—256 Spindles 4¼" Gauge.

All Individually Motorized

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72—C&K S-6 60" Looms (New)
40—Draper 64" XD Looms
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1—20 Arm Buhlmann Skein Dyeing Mach.
1—Firsching 42" Rotary Slitter
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1—Barber-Colman Warp Tying-in Mach.
1—Sipp Eastwood 84" Warper & Creel
1—Sipp DX H.S. Cone Creel
1—160 Spdl. #65 Abbott Cone Winder
1—Complete 8 Loom Heavy Narrow Duck Plant

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Since 1902

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AMERICAN AIR COMPRESSOR CORP.

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MORRIS SPEIZMAN CO., Inc.
508 W. 8th St., Charlotte, N. C.
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FOR SALE

Several Sets of Crush Rolls.
2—G.L. Stenters each 5'x5' & 5'x7', completely rebuilt—all new controls.
3—Luther Dressers 52 spindles each.
Approx. 2300 lbs. Kier Netting, 11' wide. Brand new—in original bales.

JAMES SPEED & COMPANY
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80 HP KEWANEE BOILER and W4 PETRO BURNER

Used only part of 2 short heating seasons—like new. Located at Lavonia, Georgia. Will sell for about half price. Write

FS-1578, Textile World
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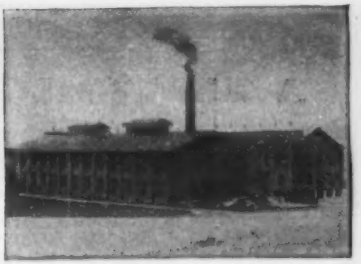
Executive Offices and New York Warehouse

McDOWELL ASSOCIATES INC.

FOR SALE



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36—Whitin Cotton CARDS 45" x 30" dia. 110 flats ea.

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34—Whitin SPINNING FRAMES 3" ga. 1⅞"—2" ring

6 Frames 204 spdls. ea.

9 Frames 216 spdls. ea.

17 Frames 240 spdls. ea.

1—Saco-Lowell SPOOLER 80 spdls.

1—Twister 200 spdls. 3½" ga.

1—D&F BANDING MACHINE

1—Terrell BOBBIN STRIPPER

1—Abbott auto. CONE WINDER 1949 model 60 spdls.

2—Abbott CONE WINDERS 1949 model 108 spdls. ea.

Abbott Cone Winders are equipped with motors, controls, automatic heads, extra knotters, 2 shift bobbin counters, automatic bobbin hoist and hoppers with operators chairs.

All supplies on hand used for operation of the above unit are available.

SPECIAL OFFERING—LATE MODEL MACHINERY

6—Sets Whitin 1945/46 Model, 3 cyl. IRON WOOL CARDS 60 x 40, with peraltas, tape condensers, 120 ends, mtrsd.

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1—Troy Mercury 1945 Model EXTRACTOR 50", self-balancing, S.S. basket, safety cover, vertical side mounted motor, V belt underneath drive

1—Hunter New 1951 Model 28B FULLING MILL, S.S. tank, mtrsd.

1—Gessner 1948 Model NAPPER 80" D.A., 24 roll

1—Gessner 1942 Model NAPPER 70" D.A., 20 roll

1—P&S 1947 Model WET STOCK PICKER, 60" wide S.S. feed rolls, apron and pins, with doctor knife for clearing top feed roll

1—Dinsmore Portable Electric ROTARY SEWING MACHINE with Morrow 60 D3B head, like new

1—C&M "Yankee Clipper" 1948 Model SHEAR, 66½" with 3 motors

1—Hermas 1948 Model 90", 4 cutter Model AV SHEARING MACHINE with 90" loop clipping attachment and 90" Railway Sewing Machine.

9—D&F 1948 Model E Wool Spinning Frames, 120 spdls. ea., 6½" ga. Bejur lubricators, mtrsd.

2—McGlynn Hayes Model 47 French type WORSTED SPINNING FRAMES, 400 spdls. each, 2" ring, with pneumafil, mtrsd.

1—Lasenby 1945 Model T Jr. COP WINDER, 30 spdl., mtrsd.

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1—Granger CALENDER friction 3 roll, 43½"
1—Haubold CALENDER 4 roll, 112", lever pressure
1—COTTAGE STEAMER 12' x 78", 2 truck unit
1—P&W COMBINATION OPEN WIDTH ROLLING, DOUBLING, WINDING AND MEASURING MACHINE 68½"
1—Rebuilt Philadelphia LOOP DRYER, revolving stick 84"
2—Quaker City MIXING KETTLES 26" x 27", Tungsten heating coils
1—D&F NAPPER 86" D.A., 24 roll, double belt workers
1—Gessner NAPPER 90", D.A., 18 roll
1—P&W SHEAR 60" cut, auto. 4 blade, S.S.

10—Crompton & Knowles W3 1948/49 Model Automatic Looms 92", Bejur lubricators, 4x1 box, 25 harness, 4 bank electric warp stop motions with drop wires, double whip rolls, 40 bobbin magazine battery for 8¾" bobbin, using shuttle 18"x2-3/16"x 1¾", motorized with 1½ HP, 440 volt, 3 phase, 60 cycle, 1150 RPM with De-Ion motor watchmaat switches. Each Loom supplied with 1½ beams, 30" flange, 3 shift Veeder-Root pick counters, transformers and indicating lights, temples, 12 bars of box chain, 16 bars of harness chain, bobbin can, 3 shuttles and reed, 15 tooth cylinder gear.

2—Crompton & Knowles W3 1944 Model Automatic Looms 92" Bejur lubricators, same as above.

72—Crompton & Knowles W1 1939 Model Automatic Looms 92", 4x1 box, 25 harness, center filling fork, friction letoff, 4 bank electric warp stop motion with drop wires, 44 bobbins, using shuttle 17½"x1⅞"x1¾" motorized with 3 HP, 550 volt, 3 phase, 60 cycles, 1780 RPM, with motor switches, each Loom supplied with one beam, 30" flange, 3 shift pick counter, temples, box chain, harness chain and heddle Frames in Looms.

6—Crompton & Knowles W1 1928/9 Model Automatic LOOMS 92", 4x1, 25 harness, 4 bank electric warp stop motion, temples, box and harness chain, motorized with 1 HP, 220 volt, 3 phase, 60 cycle, 1750 RPM with switches, 1½ beams per Loom.

12—Crompton & Knowles 92" Automatic LOOMS, approx. 1928 model, 4x1 box, 4 bank electric warp stop motion with transformers, pick counters, temples, box and harness chain with 1 beam per Loom, 32" flange, motorized 1 HP, 550 volt, 3 phase, 60 cycle, 1750 RPM with switches.

EXCLUSIVE SALES AGENTS for HOLTZ "High Speed" Knitting LOOMS

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A FEW ◀ MLC ▶ OUTSTANDING VALUES

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200—48", 52", 54", 56" R.S. C&K Plain Silk Looms, 20 h., motor driven
60—51½" R.S. Draper Model E Rayon Looms, 16 harness
90—52" R.S. Draper Mod. D Dobby Looms
20—52" R.S. C&K 2x1 Plain Looms, Gem heads, motor driven
30—54" R.S. C&K 4x1 Plain Looms, dobbies, motor driven
10—56" C&K 2x1 8-5 Auto. Shuttle Change Looms, 25 harness
24—72" R.S. Draper Mod. D 2x1 Looms, with jacquards
8—72", 84" R.S. C&K 4x4 Box Looms with jacquards
30—72", 82" C&K 4x4 Box Looms, motor driven
60—79½", 82" Draper Mod. D Looms, 20 harness, motor driven
16—82" C&K Veribest Looms, 25 h., motor driven
100—82", 92" C&K 4x1 Auto., 25 harness Looms, motor driven
8—100" C&K 2x1 Auto. Looms, 25 harness
6—110" C&K 4x4 Box Looms, 25 harness
8—Paul Muller Label Looms, 1938-44, with C&K Jacquards
2—65" Simpson type Winders
1—50" Silk Calender
1—60" Butterworth 5-roll Calender

1—67½" Yale Semi-Decater, 36" dia. cylinder
1—60" P&W Doubling and Boarding Machine
1—82" P&S Rev. Stick Loop Dryer
3—250#—500# K.W. Skein Dyeing Machines
1—40 arm Buhlman Skein Dyeing Machine
1—50" Continuous Vat Dyeing Machine, complete
1—6 string Stainless Steel lined Dye Kettle
2—60" Hunter 1941, 8-cylinder double doffer Garnetts, complete, with running-out aprons, compression rolls, batt folders, slitters, P&S cone willow
2—Kiers: 8x14' and 9x13'; individual heaters, pumps, motors
2—360 sq. J&B 3" gauge Mules, Brand New
5—45"—50" 2 and 3 roll Padders
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6M Fibre Twist. Spools—4" T. x 3⅛" H.
12M All Wood Spools—6" T. x 4" H.
60M 5B Spin. Spools—4⅜" T. x 27/16" H.
15M Spin. Spools—4⅞" T. x 4⅜" HD. 1941.
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Dyehouse Instruments

(Continued from page 294)

from the set point. The regulating unit can be made to take up the desired related control position by automatically re-positioning a second slider in a motor circuit (potentiometer).

A later development in gradual electrical control is electronic tubes used for modification and amplification of electric control impulses. The advantages of using electronic tubes are that they eliminate controller time lags by their instantaneous and precise action. Fig. 3 shows roughly how electronic control is performed, by using variation of an electric field to provide powerful and correct control action from a minute mechanical impulse (pen movement).

COMPRESSED AIR. Compressed air of constant pressure as an outside source of power for control movement is one of the agents most widely used for process control. The primary or detecting controller elements are the same as for ordinary measurement of pressure, temperature, and rate of flow. The housing of the pneumatic controller contains a measuring unit and a controlling unit. The latter transforms measurement of a deviation into movement.

The control unit usually incorporates an air nozzle and a flapper, which combination varies pressure in the air branch line leading from the control mechanism to the diaphragm valve. The air pressure is also called the "output" pressure of the control mechanism and is proportional to valve position. Fig. 4 illustrates diagrammatically a simple type of pneumatic On/Off control.

Changing output pressure moves a flat (or bellows) diaphragm, which in turn actuates the valve stem, or a lever for movement of air dampers, or whatever the regulating (final) device may be. A covered air-nozzle opening provides full branch-line pressure on top of the valve diaphragm, but an uncovered nozzle releases this pressure to nil, and the return spring of the valve moves it into its opposite position.

Other types of control include a fixed-nozzle and movable-flapper arrangement, a ball-type pilot-valve arrangement, and a throttling-bellows arrangement.

Adjustments

Among the most important means for adapting reaction of a controller to the demand from the controlled process is variation of the control

(Continued on page 340)

DYEING & FINISHING

10—Van Vlaanderen Stainless steel tensionless dye jiggs, auto. & semi-auto. reversing, 50" & 70" wide. Age 1948
1—Boil Off Range, 60" wide, w/3 Rope Washers
1—Van Vlaanderen Palmer Tenter Unit, 50" cloth, w/30' tenter frame
4—Copper jacketed mixing kettles w/agitators 50 & 100 gallon
1—National Loop Dryer 40' long, 87" cloth, 4 fans, M.D.
1—Hercules Centrifugal extractor 60", M.D.
2—Morrison Quetsches, 60" wide, lever pressure, M.D.
1—Van Vlaanderen Button Breaker, 60" wide, 18 rollers, M.D.
3—Van Vlaanderen Hi-Speed Tubers, 60" wide, M.D.
1—Van Vlaanderen Singer, 60" wide, 2 gas burners
1—Butterworth Can Dryer, 23 copper cans, 60" wide, vertical
1—Greige Washer, 4 compartments, 60" wide, nip rolls
1—Textile Ager 18' long x 54" mouthpiece, M.D.
1—Textile Calender, 3 rolls, 1 steel, 50" wide, M.D.

1—Residual Shrinkage Control Range; Dalglish Pin Tenter Frame 100' long x 60". Proctor & Schwartz 80' housing, Proctor & Schwartz 30' Roller Pre-Dryer, and Morrison Micro Set Padder Age 1947
1—Morrison Williams Range, 60" wide, 2 Williams Boxes, Micro Set Padder, 3 stainless steel Wash Tanks. Age 1948

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1—Rice, Barton & Fales Print Machine, 12 colors, 50" wide
2—Rice, Barton & Fales Print Machines, 10 colors, 44" wide
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2—Rice, Barton & Fales Print Machines, 8 colors, 60" wide
1—Rice, Barton & Fales Print Machine, 7 colors, 45" wide
1—Rice, Barton & Fales Print Machine, 6 colors, 45" wide
1—Rice, Barton & Fales Print Machine, 5 colors, 42" wide

SPINNING

2—S-L Single Process Pickers, auto. feeders
2—Butterworth Rag Pickers, 17" w/apron
4—S-L Kitson Feeder Hoppers, 18"
12—Mason Cards, 40", 27" doffer, 100-110
22—Dobson & Barlow Cards, 40", 24" doffer, strippers
5—Intersecting Gill Boxes, 2 head
2—Whitin Slivor Lappers, 20 end, 9 ¾" spool
2—Whitin Ribbon Lappers, 4 lap, 11 ¾" spool
12—Whitin Drawing, 6 del. Model H, 16" gauge
5—S-L 7/3½ Slubbers, 160 spdl. 5¼" ga, J-2 L.D.
4—S-P 9/4½ Slubbers, 100 spdl. 7½" ga. J-1 L.D.
28—S-P 11x5½ Slubbers, 64 spdl. 9½" ga, Casablanca L.D.
11—Whitin Spinning Frames, 252 spdl. 3¼" ga, Casablanca, L.D.
17—Universal #50 Winders, L. drive, cone, belt gain
3—Collins Twisters, 154 spdl. 4½" ga, tape drive
3—Collins Twisters, 84 spdl. 5½" ga, band drive
2—Fales & Jenks Twisters, 132 spdls. 3½" ga, tape drive

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300—Draper XD, 44" cloth, 20 harness dobby, Age 1941, M.D.
12—Axminister 9' Carpet looms, M.D.
150—Crompton & Knowles "Cotton King" 4x1 auto., 45½" r.s. M.D.
12—Draper Model G 93" auto. M.D.
73—Crompton & Knowles, Model 55, 56" r.s., 2x1 box, 20 harness
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76—Draper, Model K, 48" cloth, 20 harness dobby
31—Draper Auto., 72", 4 bank stop motion
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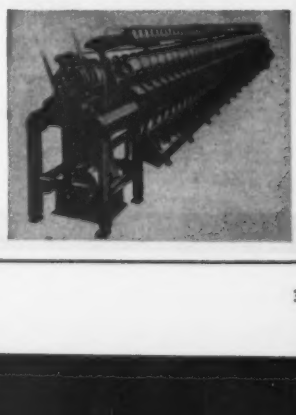

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2 C & K 100" R. S. 4x4
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10 C & K 4x1 Automatic 82" R.S.
5 C & K 4x4 82" R.S.

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1 19 can Butterworth dryer 72"
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6 Werner Jiggs SS
30 50" Dry Cans
1 Birch Bros. Scutcher & Vacuum 60"

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band, sometimes called the "throttling range." This throttling-range adjustment may at some time have to be performed by the plant engineer in charge of instruments if working conditions of a controlled process should change greatly. It is therefore worth while to know about the purpose of this adjustment.

The width of the control band, or throttling range, is a symbol for "rate of valve movement per unit change of process variable." In other words, a narrow band produces larger valve movement and a wide band produces smaller movement if the condition of the process variable changes. One process needs a bigger rate of input energy (heat); another process wants a smaller rate for restoring balance.

A movable fulcrum can be used for varying amounts of flapper movement with unit change of temperature. This variation makes it possible to adapt the change of rate of flow of steam to the actual process demand. Whenever gradual mode of control is applied, adjustment of width of control band is one of the first means for adapting controller response to the required conditions.

When process load, or the input of energy into a process, varies considerably and suddenly, control becomes difficult. "Offset," or wandering of the control point from the desired value, develops for various reasons. Shifting of the control point, or rather of the whole control band, can be corrected by hand when sudden changes of process load are not too frequent; but it is also desirable to provide means for automatically resetting the control point in case of offset. This need has led to development of "stabilized" controller types.

A controller that automatically readjusts the desired value of the controlled variable in case of sudden load changes is called the "reset-type." It reacts not only on the amount of deviation from the desired value, but also on the rate at which this deviation develops.

Another stabilized type is called the "reset-rate"; this controller type takes into account not only the speed of change of deviation, but also the acceleration at which it occurs. It reacts even more quickly in damping undesirable oscillations, and resets the control point in case of a heavy disturbance sooner than a reset type does.

Choice of Control Valve

Accuracy of temperature control depends largely on the correct choice of type and size of control valve. On/Off control valves have usually

(Continued on page 342)

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beveled disks; but gradual control valves show a great variety of shapes for valve disks, such as the V-port, parabolic, ball, and needle-valve disk types.

The reason for the various types of disks is that rate of flow varies with the square root of differential pressure, and equal increments of valve lift near the seat would cause excessive rate of flow compared with the same lift farther away from the seat. A V-port opening reduces flow area near the seat, thus providing an equal percentage increase of flow over the whole value lift. Control mechanisms are usually built for producing equal-percentage value lifts over the whole range of opening; and the only means of restriction of flow is, therefore, to shape the valve disk accordingly.

Makers of control valves issue tables or graphs for valve sizing, which may be used for a rough estimate of the valve size. The ultimate choice of valve size should, however, be made or confirmed by the control expert.

Valve capacity depends, among other factors, on the pressure differential between inlet and outlet, or on "pressure drop" across the valve. To choose correctly a pressure drop for valve sizing that will correspond with the actual pressure drop of the valve, if installed, is not easy. A pressure drop chosen for estimating purposes for preliminary valve sizing might prove to be too small in practice, which situation would necessitate the use of an oversized control valve.

The basic principles for valve sizing of a gradual control valve are: (1) Throttling action for control of temperature must occur at the valve seat, and nowhere else in the supply pipe; and (2) the pressure drop across the valve, and thus its flow capacity, must be chosen according to actual working conditions.

For example, the actual pressure drop across a valve would be much bigger in the case of open-steam injection than with a steam coil. Steam coils produce considerable back pressure, and thus reduce valve capacity.

It is obvious that exact data on rate of hot water or steam flow must be available for correct valve sizing. Questionnaires supplied by the makers of temperature regulators must, therefore, be carefully filled in, and should disclose all data related to heat consumption, capacity of plant, and working conditions in general. For example, the tank dimensions of a hot-water supply tank are of secondary importance, but the volume and duration of each draw-off, frequency of draw-offs, and of peak loads are most important for valve sizing.

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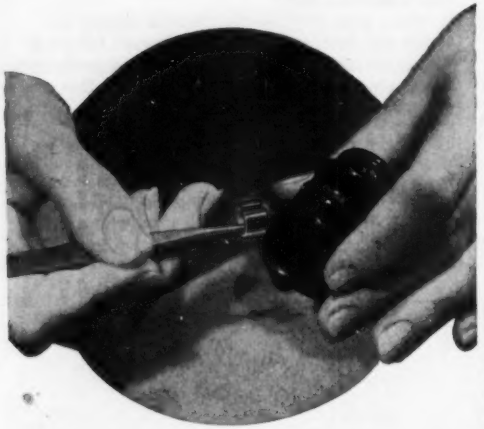

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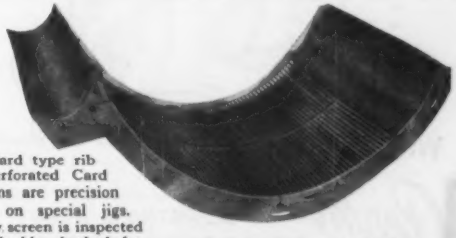

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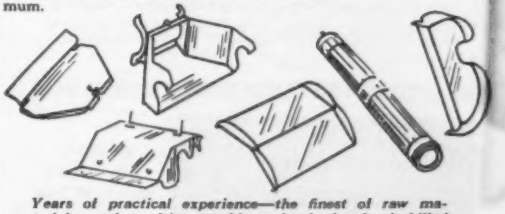

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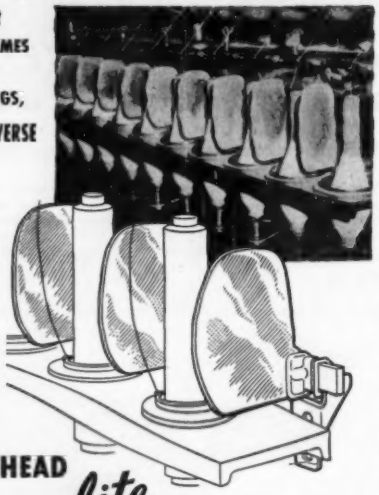

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TEXTILE WORLD

SEPTEMBER, 1951

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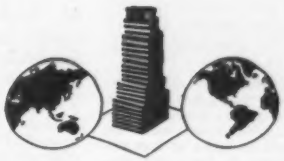

▸ Brief Summaries in Spanish, French, and German of the Major Feature Articles in This Month's Issue

Español

Página 105

Tabla de Fibras Sintéticas. El tópico más importante de este número es la revisión bienal de la famosa tabla de fibras sintéticas de la revista TEXTILE WORLD. Se han dedicado veinte páginas para relacionar las propiedades físicas, químicas y mecánicas y las limitaciones de cada una de las fibras hechas por el hombre en los E.U.A., con lujo de detalles, y de las fibras extranjeras en general. Las tablas y las estadísticas de las fibras, datando algunas de muchos años atrás, muestran gráficamente el aumento en la producción y en el consumo de los rayones y otros sintéticos en los Estados Unidos y en el mundo entero.

Página 127

Un Mecánico de Telares Necesita Tres Calibradores. Los calibradores de telares pueden ser hechos en su propio taller. Uno de ellos es usado para graduar el recorrido y la fuerza. Otro es usado para regular la picada. Un tercero, para ajustar el protector de la urdimbre, graduar las lengüetas y regular los lizos. Con estos calibradores usted puede estar seguro de que sus telares estarán regulados uniforme y adecuadamente, y de que obtendrá una vellosidad normal en sus telas.

Página 130

Un Estudio de la Elaboración Técnica de Géneros Tricot. Debido a que no existen reglas normales en el diseño de géneros de tricot, el Departamento de Investigación de Tejidos de la American Viscose Corp. realizó una serie de experimentos de los factores que afectan la construcción de estos tejidos. Se varió la carrera así como la relación de carrera en una serie de 18 géneros. El efecto de cada cambio sobre la resistencia a la reventazón, las onzas por pulgada en cada máquina, el rendimiento, etc., son mostrados en los gráficos que acompañan el artículo.

Français

Page 105

Tableau des Fibres Synthétiques. Ce fameux tableau de TEXTILE WORLD, révisé tous les deux ans, constitue la matière de cet article. Vingt pages sont consacrées à l'énumération des qualités physiques, chimiques et mécaniques ainsi que des limites inhérentes aux fibres synthétiques américaines et étrangères en général. Des statistiques, certaines remontant à de nombreuses années, montrent graphiquement l'augmentation de la production et de la consommation de la rayonne et des autres fibres synthétiques, aux Etats-Unis et à l'étranger.

Page 127

Un régleur de métiers a besoin de trois calibres. Ces calibres peuvent être fabriqués dans votre propre atelier. L'un servira à régler la foule; l'autre, la chasse et le dernier les harnais. Ces trois calibres assureront un réglage parfait de vos métiers et un duitage constant.

Page 130

Des "constructions" de tricot indémaillable. Etant donné qu'il n'existe pas de règles établies qui permettent de déterminer les caractéristiques de nouvelles créations en tricot indémaillable, la section de recherches textiles de l'American Viscose Corporation a entrepris une série de recherches détaillées des facteurs affectant ce genre de tricots. Le nombre de rangées et leur proportion furent changés dans 18 qualités différentes de tricot. Un tableau présente le résultat de ces modifications, en rendement, poids en onces au quitter du métier, résistance, etc.

Page 133

Usine de peigné moderne. Une des usines de peigné les plus modernes du monde a commencé à fonctionner, en

Deutsch

Seite 105

Kunstfaserntabelle. Die alle zwei Jahre wiederkehrende Revision der ausgezeichneten Kunstfaserntabelle der TEXTILE WORLD, ist der Hochepunkt dieser Ausgabe. Zwanzig Seiten sind der detaillierten Anfuehrung aller physikalischen, chemischen und mechanischen Eigenschaften, sowie Limitierungen jeder in Amerika erzeugten Kunstfaser und den auslaendischen Fasern im Allgemeinen, gewidmet. Faserstatistiken und Tabellen – manche gehen auf Jahre zurueck – zeigen graphisch die Steigerung in der Erzeugung und den Verbrauch von Kunstseide und anderen synthetisch erzeugten Fasern in den Vereinigten Staaten und auf der ganzen Welt.

Seite 127

Ein Webstuhlmechaniker benoetigt 3 Masstaebe. Webstuhlmessapparate koennen in der eigenen Werkstaette erzeugt werden. Einer wird zur Einstellung des Ladenschlages und zur Messung der notwendigen Kraftstaerke verwendet, ein anderer fuer die Anzahl der Schusse per Zeiteinheit; ein dritter, um die Schuetzenwaechter und die Endleisten einzustellen und um das Webgeschirr anzugleichen. Mit diesen Masstaeben hat man die Gewaehr, dass die Webstuehle gleichmaessig und richtig eingestellt sind und dass man ein einheitliches Aussehen der Fabrikate bekommt.

Seite 130

Eine Anleitung fuer die Trikotagen Erzeugung. Da keine Standardregeln fuer das Entwerfen von Trikotfabrikaten bestehen, hat die Textilforschungsabteilung der American Viscose Corporation langwierige Experimente gemacht, um die die Konstruktion von Trikotagen beeinflussende Faktoren herauszufinden. Bei den Versuchen an einer Serie von 18 Fabrikaten stellte

Página 133

Moderna Fábrica de Casimires. En la actualidad funciona en Inglaterra una de las fábricas de casimires más modernas del mundo. El uso de los más modernos métodos técnicos, maquinaria y sistemas de manipulación mecánica ha reducido una tercera parte la mano de obra. Las continuas de hilatura centrífuga funcionan a 11.500 a 13.500 rpm. y mudan cada dos minutos. El techo proporciona luz solar del norte por toda la planta y soporta los conductos de acondicionamiento de aire lavado. Hasta la fecha se han entrenado unos 2.000 de los 3.000 trabajadores. Las fotografías muestran muchas características técnicas y procedimientos de máquinas.

Página 138

Nuevo Sistema de Energía. Los beneficios recibidos por una gran hilatura del Estado de Nueva York de una nueva instalación de fuerza comprenden: (1) seguridad de la adaptabilidad y confiabilidad de las operaciones; (2) eliminación del parpadeo de las lámparas y voltaje bajo para motores; y (3) provisión para cambios futuros. El sistema, que se caracteriza por principios de subestación de centro de distribución, reemplazó una subestación central con alimentadores radiales. Un diagrama de la línea proporciona un plan detallado del nuevo sistema de distribución.

Página 140

Medición de la Relación de Flujo. La medición del flujo en una fábrica de tejidos de lana es tratada e ilustrada en este artículo. En el lavado, los reguladores de lotes miden automáticamente la sosa calcinada, el agua y el jabón. Se usan también indicadores de relación de flujo en los batanes mezcladores, encolado de urdimbres, carbonización y teñido. El artículo describe cada uso.

Página 141

Sistema "Pneumafil" de Estación Central. Este artículo describe el sistema "Pneumafil" que es usado en conjunción con un sistema de acondicionamiento de aire de estación centralizada. Los ventiladores y motores están colocados en una caseta sobre el techo de la fábrica y extraen el aire introduciéndolo en una lavadora o depuradora de aire. El sistema elimina las contracorrientes en las salas de hilatura, reduce la cantidad de operaciones necesarias, y proporcionan más alta calidad y eficiencia en la hilatura.

Página 144

Técnica Mejorada para Entrevistar Obreros. Cuatro fábricas americanas se empeñaron en mejorar la selección del personal por medio de entrevistas

partie, en Angleterre. Une combinaison de matériel, de disposition d'usine et de manutention modernes a contribué à réduire d'un tiers l'emploi de la main-d'oeuvre. Des métiers de filature centrifuge marchent à raison de 11.500 à 13.500 yards à la minute avec vidage des broches toutes les deux minutes. L'usine tout entière est éclairée du Nord et le toit supporte des conduites de conditionnement et de lavage d'air. Des 3000 ouvriers qui seront employés, 2000 ont déjà été formés. Les illustrations de l'article montrent les faits saillants de l'installation et plusieurs procédés de cette fabrication.

Page 138

Nouvelle installation électrique. Parmi les avantages résultant d'un nouveau système de distribution électrique dans une usine de l'Etat de New York, citons: flexibilité et fonctionnement certain, suppression du vacillement de la lumière et des voltages bas aux moteurs, et facilité de changements futurs. Un diagramme donne des détails complets sur le système de distribution.

Page 140

Enregistrage de la production. Cet article illustré décrit l'enregistrement automatique de la production dans une usine de laine. Au lavage, des appareils contrôlent automatiquement les proportions de soude, d'eau, et de savon. Des enregistreurs sont aussi employés aux loups-ouvreurs, à l'encollage des chaînes, au carbonisage et à la teinture. Chacun de ces usages est expliqué plus en détail.

Page 141

Système Pneumafil à station centrale. L'article décrit un système Pneumafil combiné avec une station centrale de conditionnement d'air. Les ventilateurs et moteurs sont logés au point le plus élevé de l'usine et aspirent l'air qui passe dans une installation de lavage. De cette façon les tourbillons sont supprimés dans les salles de filature, les opérations de nettoyages sont réduites au minimum, et le rendement et la qualité ont été accrus.

Page 144

Systèmes perfectionnés d'interview et d'examen. Quatre usines américaines ont introduit des systèmes perfectionnés d'interview. Elles emploient à cet effet des systèmes établis sur des principes identiques et dans le cas d'une usine de tricotage bien connue il en résultat une amélioration de 50% dans la situation de l'embauchage. Dans les trois autres cas les résultats furent favorables également. Ces systèmes d'entrevue mettent à jour des faits imper-

man fest, dass die Zahl der Garnlaeufer und das Verhaeltnis solcher Fehler zu der Gesamtanzahl verschieden war. Eine Tabelle zeigt wie jede Umaenderung an der Maschine die Reissfestigkeit, das Gewicht (ounces) per Zoll, die erzeugte Quantitaet, usw., beeinflusst.

Seite 133

Eine moderne Kammgarnfabrik. Eine der modernsten Kammgarnfabriken der Welt hat bereits teilweise den Betrieb in England aufgenommen. Fabriksbau, Maschinen und mechanische Handhabungsmethoden sind von modernster Ausfuehrung und haben die Arbeitskosten um ein Drittel herabgesetzt. Zentrifugale Ringspinnmaschinen laufen mit 11,500 bis 13,500 U.p.M. und ermoeglichen das Garnabnehmen in 2 Minuten. Das Dach gibt ueberall Nordlicht und Luftwasch- und Reinigungsroehren sind eingebaut. Ungefaehr 2000 bis 3000 Arbeiter wurden bereits abgerichtet. Abbildungen zeigen die hervorstechenden Einzelheiten der Anlage und vieler Maschinenprozesse.

Seite 138

Neue Kraftanlage. Die durch Installation einer neuen Kraftanlage in einer New York State Fabrik erzielten Vorteile sind: (1) Groessere Flexibilitaet und Verlaesslichkeit der Anlage, (2) Eliminierung von flackernden Lampen und niedrige Spannung (Volt) bei den Motoren, und (3) Vorkehrung fuer kuenftige Aenderungen. Das auf eine Belastungsverteilerzentrale aufgebaute System ersetzt eine solche mit radialen Speiseleitungen. Ein Leitungsdiagramm zeigt einen detailierten Plan des neuen Verteilersystem.

Seite 140

Messung der Erzeugungsgeschwindigkeit. Messung der Produktionsgeschwindigkeit einer Wollfabrik wird erlaeutert und illustriert. Im Waschprozess messen die Apparate automatisch das Mengenverhaeltnis von Sodalauge, Wasser und Seife. Geschwindigkeitsanzeiger werden auch in der Wolferei, in der Schlichterei, in der Karbonisierung und Faerberei verwendet und deren Gebrauch beschrieben.

Seite 141

Zentralanlage fuer Pneumafil-System. Dieser Artikel beschreibt eine Pneumafil Installation, welche mit einem Zentral-Luftkuehlungssystem verbunden ist. Exhaustoren und Motore sind in einem Aufbau auf dem Dach der Fabrik untergebracht und pumpen die Luft zu den Luftwaschern. Das System beseitigt Zugluft in den Spinnsaelen, reduziert die notwendigen Reinigungsarbeiten und gewaehrt eine bessere Spinnqualitaet und erhoehte Leistungsfaehigkeit.

Seite 144

Verbesserte Interview-Technik. Vier amerikanische Fabriken haben es un-

proyectadas u otra técnica similar. El movimiento de personal en una bien conocida organización de tejidos se redujo en casi el 50 por ciento, y los resultados obtenidos en las otras fábricas fueron muy lisonjeros. Las entrevistas proyectadas ayudan al entrevistador a obtener datos importantes de la personalidad del solicitante, y combina la experiencia y el comportamiento anterior del operario con sus futuras posibilidades productoras.

Página 147

Mujeres Como Operarias de Cardas. Una fábrica de tejidos de algodón de la Nueva Inglaterra proyecta utilizar más mujeres en las cardas si se presentase una gran escasez de hombres. El grupo de jefes de departamentos ha hecho una relación de todos los trabajos desempeñados por hombres en sus secciones que pudieran ser sustituidos entera o parcialmente por mujeres. En esa relación se dividieron los trabajos en labores que pudieran realizar las mujeres en caso necesario, y se hace constar los trabajos que tienen que ser hechos por hombres por una razón u otra.

Página 149

Eficiente Distribución de Planta en una Pequeña Hilatura. Ciertas fábricas estiman que el revisar la distribución de la planta beneficia solamente a las hilaturas grandes. Ya sea una fábrica grande o pequeña, se necesita una distribución eficiente si se desea obtener el máximo de producción a costo mínimo. Este artículo trata de los puntos principales que hay que tener en cuenta para lograr una distribución eficiente de una fábrica.

Página 151

Un Regulador de Humedad Reduce los Gastos del Rameado y Aumenta la Producción. Una planta de acabado textil ha instalado un regulador electrónico de humedad Fielden Drimeter en sus secadoras de rameado. El equipo ha reembolsado su costo en menos de seis meses. La producción se aumentó en el 20 por ciento; el consumo de vapor se redujo un 43 por ciento y los gastos de suministro de energía bajaron un 34 por ciento. Los géneros elaborados son más fáciles de manipular y su acabado ha resultado de mayor uniformidad.

Página 153

Moderno Salón de Apertura. Este artículo describe cómo la Fulton Bag & Cotton Mills, de Atlanta, Ga., ha eliminado con éxito las condiciones pobres de trabajo en la sala de apertura de esta hilatura. Como parte del programa general de modernización, la compañía ha arreglado su sala de apertura moviéndola a una sección espaciosa y bien alumbrada, instalando

tants concernant la personnalité du candidat et permettent de trouver dans les éléments de son activité passé les possibilités qu'il offre pour la tâche en vue.

Page 147

Ouvrières cardeuses. Une usine de la Nouvelle Angleterre a décidé d'augmenter le nombre d'ouvrières cardeuses, dans l'éventualité où le manque d'ouvriers devrait s'accroître. Les chefs de départements de cette usine ont dressé une liste de toutes les besognes, d'ordinaire remplies par des hommes, qui pourraient éventuellement être accomplies en tout ou en partie par des femmes. L'ensemble de tous les emplois de l'usine est divisé en deux: d'une part les tâches qui pourraient en cas de besoin être confiées à des femmes, et d'autre part les travaux qui pour une raison ou une autre ne peuvent être exécutés que par des hommes.

Page 149

Plan de disposition intérieure pratique d'une petite usine de tricotage. Certaines usines pensent qu'un changement dans la disposition intérieure d'une usine n'est avantageux que pour de grosses usines. Cependant, qu'une fabrique soit grande ou petite, un circuit de fabrication pratique est de nécessité, si l'on veut obtenir le maximum de rendement combiné à un bas prix de revient. Cet article cite les points essentiels à considérer pour atteindre ce but.

Page 151

Un appareil de contrôle d'humidité réduit les frais d'une rame-sécheuse et augmente la production. Un apprêt et finissage installa un appareil de contrôle d'humidité électronique "Fielden Drimeter" sur ses rames-sécheuses. La dépense fut amortie en moins de six mois. La production augmenta de 20%, les frais de vapeur furent réduits de 43% et ceux de force motrice de 34%. Les tissus gagnèrent une meilleure "main" et la qualité de l'apprêt devint plus uniforme.

Page 153

Salle d'ouvraison moderne. Cet article décrit comment la Fulton Bag & Cotton Mills a remédié aux conditions défectueuses qui existaient dans ses salles d'ouvraison. Un programme général de modernisation comportait la re-installation de l'ouvraison dans une des zones les mieux éclairées de l'usine. La place qui lui fut réservée est ample. Le nouveau matériel inclut de nombreuses mélangeuses ainsi que l'installation d'un système d'humidification avec contrôles. La poussière de la salle est éliminée par filtres. Un système de con-

ternommen, die Auswahl von Arbeitern durch gewisse Arten von Interviews und aehnlichen Techniken zu verbessern. Bei einem sehr bekannten Strickwarenunternehmen wurde der Arbeiterwechsel um 50% reduziert; auch die in anderen Fabriken gesammelten Erfahrungen waren gut. Vorgezeichnete Interviews helfen dem Fragesteller wichtige Fakten ueber die Personalitaet eines jeden Arbeiters zu bekommen und seine Arbeit und gehabten Erfahrungen mit zukuenftigen Verwendungsmoeglichkeiten in Einklang zu bringen.

Seite 147

Frauen als Helfer an Karden. Eine Baumwollfabrik in Neu-England plant mehr Frauen an Krempeln arbeiten zu lassen, sollte Mangel an maennlichen Arbeitskraeften eintreten. Abteilungsleiter haben alle von Maennern versehene Arbeiten verzeichnet, die ganz, oder teilweise, von Frauen ausgefuehrt werden koennen. Die Arbeiten sind in solche eingeteilt, die, wenn noetig, von Frauen geleistet werden koennen und in solche, die aus verschiedenen Gruenden nur von Maennern gemacht werden koennen.

Seite 149

Zweckmaessige Fabriksanlage einer kleinen Strickwarenfabrik. Manche Fabriken glauben, dass eine Veraenderung der Anlage nur fuer grosse Fabriken von Vorteil sei. Gleichgiltig ob eine Fabrik gross oder klein ist, kann man durch eine zweckmaessige Anlage eine Hoechstproduktion zu den niedrigsten Kosten erzielen. Dieser Artikel zaehlt die wichtigsten Punkte auf, die fuer eine zweckmaessige Fabriksanlage zu beruecksichtigen sind.

Seite 151

Feuchtigkeitskontrollapparat vermindert Trockenkosten und erhoeht Produktion. Eine Textilappretur hat einen "Fielden Drimeter" Elektronischen Feuchtigkeitskontrollapparat an ihren Rahmentrockner installiert. Diese Geldausgabe hat sich in weniger als 6 Monaten selbst bezahlt gemacht. Die Produktion wurde um 20% erhoeht, der Dampfverbrauch wurde um 43% und die Stromkosten um 34% herabgesetzt. Die erzeugten Fabrikate hatten einen besseren Griff und die Appretur war einheitlicher.

Seite 153

Moderne Baumwollvorbereitungs (Oeffnen) Abteilung. Dieser Artikel beschreibt, wie die Fulton Bag & Cotton Mills, Atlanta, Ga., die schlechten Arbeitsverhaeltnisse im Vorbereitungsraum ihrer Fabrik abgeschafft hat. Als Teil ihres allgemeinen Modernisierungsprogrammes, hat die Gesellschaft ihre Vorbereitungsabteilung zeitgemaess in einen geraeumigen, gut beleuchtenden Arbeitsraum der Fabrik uebersiedelt, neue Maschinen, wie Oeffner, Luftbefeuchtungsanlagen, so-

nueva maquinaria con abundantes mezcladores; colocando humidificadores y controles de humedad; reduciendo el polvo por medio de filtros y poniendo controles automáticos seccionales para localizar y evitar los incendios.

Página 157

Instrumentación de Tintorería. Un teñidor práctico debe conocer las diversas clases de instrumentos de control que tiene a su disposición. Debe saber qué grado de control necesita para poder obtener la instalación de la válvula reguladora del tamaño correcto. Una vez que comprenda el principio tras los diversos instrumentos, se le facilitará mucho más su conservación.

Página 161

Nuevo Adaptador de Huso. En la actualidad se diseñan adaptadores de huso para convertir husos de bobina de madera a husos de tubo de cartón. Las fábricas informan que los husos equipados con adaptador ahorran 3.7 centavos por huso al año en el costo de reposición de collarines y 2.1 centavos por continua de anillos por hora en el costo de mudada. Se ha reducido un 25 por ciento la rotura de cabos en la hilatura. El costo de la mudada, según se dice, es menor que la mitad del costo de husos de tubo nuevos.

trôle d'incendie qui divise l'usine en zones tend à limiter ou à prévenir les incendies.

Page 157

Instruments de contrôle pour teinturerie. Un teinturier devrait posséder une connaissance suffisante des instruments de contrôle pour teinturerie qui sont sur le marché. Il devrait savoir quel degré de contrôle est désirable dans sa teinturerie afin de faire installer les valves du modèle et des dimensions nécessaires. Il est évidemment plus facile de garder cet appareillage en bon état de fonctionnement si l'on comprend les principes qui sont à sa base.

Page 161

Nouveaux adapteurs de broches. Il y a maintenant sur le marché des adapteurs de broches qui permettent de transformer des broches pour bobines en bois en broches pour tubes en papier. Certaines usines rapportent que des adaptateurs de ce genre permettent de réaliser une économie de 3.7 cents par broche et par an en économie de pièces de rechange et de 2.1 cents par heure et par métier en frais d'opération. Il y a en outre une économie de 25% en fils rompus. Le coût de la transformation ne représente même pas la moitié du prix d'une broche à tube neuve.

wie Luftbefeuchtungskontrollapparate, usw., installiert. Entfernung von Staub geschieht durch Filteranlagen und Einrichtung von automatischen Kontrollen in den Unterabteilungen verhindert Braende, resp. die Ausdehnung derselben.

Seite 157

Faerberei Instrumente. Ein praktischer Faerber soll die verschiedenen ihm zur Verfuegung stehenden Arten der Kontrollinstrumente verstehen. Er soll wissen, welchen Kontrollgrad er benoetigt, damit er das Kontrollventil richtig einstellen kann. Sobald er mit den Grundsaetzen der verschiedenen Instrumente vertraut ist, ist die Instandhaltung derselben erleichtert.

Seite 161

Neuer Spindel Adapter. Es sind jetzt Spindeladapter entworfen, um Spindel fuer Holzapulen zur Verwendung fuer Papierhuelsen gebrauchsfaehig zu machen. Fabriken berichten, dass mit Adapter ausgestattete Spindeln jaehrlich 3.7¢ per Spindel an Kosten fuer Ersatzteile, und 2.1¢ per Ringspinnmaschine an Abnehmekosten, ersparen. Fadenbrueche beim Spinnen sind um 25% vermindert. Umaenderungskosten sollen geringer sein als der halbe Preis von neuen Spindeln fuer Huelsen.

Textile Vocabulary	Vocabulario Textil	Vocabulaire Textile	Textilfachausdruecke
blenders	mezcladores	mélangeuses	Oeffner
bursting strength	resistencia a la reventazón	résistance	Reissfestigkeit
carbonizing	carbonización	carbonisage	Karbonisierung
change	cambio	modification	Umaenderung
cross-currents	contra-corrientes	tourbillons	Zugluft
doff	mudar	vidage de broches	Garnabnehmen
ducts	conductos	conduites	Roehre
efficiency	eficiencia	rendement	Leistungsfaehigkeit
fabric	género	tissu	Fabrikat
finishing plant	planta de acabado	apprêt	Appretur
gauges	calibradores	calibres	Masstaeben
harness	lizo	harnais	Webgeschirr
labor turnover	movimiento de personal	embauchage	Arbeiterwechsel
measurement	medición	enregistrage	Messung
mechanical handling	manipulación mecánica	manutention moderne	mechanische Handhabungsmethoden
moisture controller	regulador de humedad	appareil de contrôle d'humidité	Feuchtigkeitskontrollapparat
plant layout	distribución de planta	plan de distribution intérieure	Fabriksanlage
pick	picada	duite	Schuss
power	energía	force motrice	Strom
ratio	relación	proportion	Verhaeltnis
research	investigación	recherches	Forschung
runner	carrera	rangée	Garnlaeufer
scouring	lavado	lavage	Waschprozess
spindle	huso	broche	Spindel
spinning	hilatura	filature	Spinnen
stroke	recorrido	foule	Ladenschlag
tenter dryer	secadora de rameado	rame-sécheuse	Rahmentrockner
worsted mill	fabrica de casimires	usine de peigné	Kammgarnfabrik

Mc BRIDE

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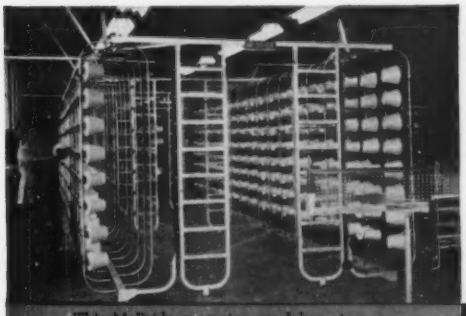
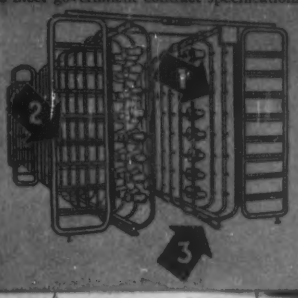


McBRIDE MAGAZINE CREELS SPEED WARPING—CUT WARPING COSTS

The photographs on this page show typical installations of McBride SRM magazine creels. Every one of them is equipped with McBride patented Swinging Arms, Universal Cone Holders, Double Post Disc Type Tension Units (1), and McBride instant action Electro Magnetic Stop Motion (2), McBride monorail construction (3) means easy cleaning. Yet the thing most typical about these creels is their difference! Each is engineered to the needs of the user.

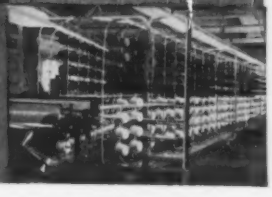
McBride Magazine Creels can be assembled for outside loading with yarn coming down the center as in the silk and rayon system, or with inside loading and yarn coming down the outside as in the cotton or wool systems.

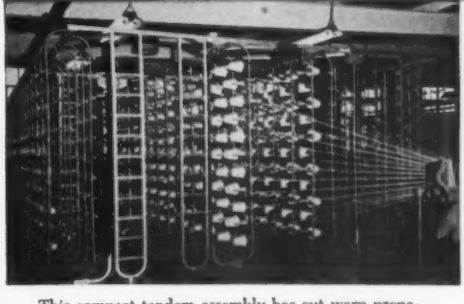
This McBride magazine creel has given a prominent narrow fabric weaver versatility to prepare alternate nylon and cotton warps to meet government contract specifications.



Woolen and worsted ball warps are quickly prepared by this prominent eastern spinner with the aid of this McBride SRM Magazine Creel.

This creel for high speed warping of woolen and worsted pattern fabrics has cut warping costs over 30% for a prominent Pennsylvania manufacturer.





This compact tandem assembly has cut warp preparation costs by ¾ for this narrow fabric weaver.

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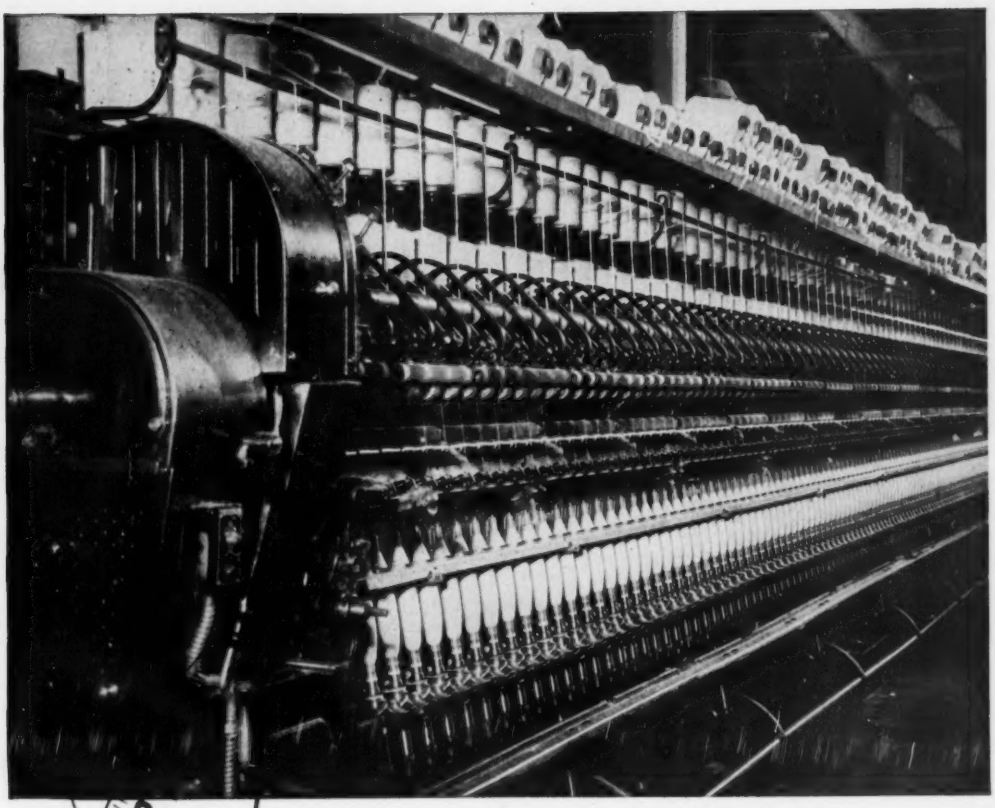

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